

# MOTOR AGE

Vol. V No. 15

APRIL 14, 1904

Ten Cents



**WINTON**

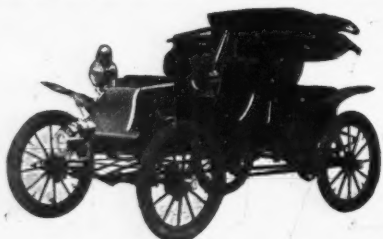
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Many motor cars are "absolutely best" in the advertisements; but in actual service the Winton is king. Its superiority is individual and exclusive. The most satisfied motorists in the world are Winton users. Our big plant is turning out one Winton car an hour. That means prompt deliveries. Price, complete, \$2500.

**The Winton Motor Carriage Co.**  
Member Association Licensed Automobile Mfrs.  
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WINTON AGENCIES  
EVERYWHERE

**WINTON is King Long live the KING**



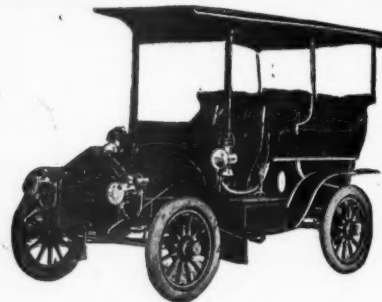
### Light Touring Car

Having much the same outward appearance as our Runabout of 1903, but of higher power and capacity and distinctly a powerful touring car—not a Runabout—the most highly developed car of its type—the perfected product of the oldest makers of motor cars in America.

Price..... **\$1450**

# THE 1904 HAYNES

Were the only 1904 models in the New York to Pittsburg run and earned Two FIRST-CLASS AWARDS.



### Tonneau

With top and front glass, two Solar No. 1 gas headlights, two Dietz Regal oil lights, tail light, horn with tube, and full equipment.

Price..... **\$2550**  
Without top and front glass.....\$2450

It shows fewer mechanical changes and contains more features that years of use have proved perfect in practice than any other, and is backed by an unequaled past record—seventeen contests entered—seventeen contests won, with stock cars.

## HAYNES-APPERSON CO.

The Oldest Makers of Motor Cars in America.

KOKOMO, IND., U. S. A.

Members of the Association of Licensed Automobile Manufacturers.

Branch Store: 1420 Michigan Avenue, Chicago.

Eastern Representative: Brooklyn Automobile Co., 1239-41-43 Fulton Street, Brooklyn, N. Y., and 66 West 43d Street, New York. Agents for Western New York: Buffalo Automobile Exchange, 401 Franklin St., Buffalo, N. Y.

# KNOX WATERLESS GASOLINE CARS

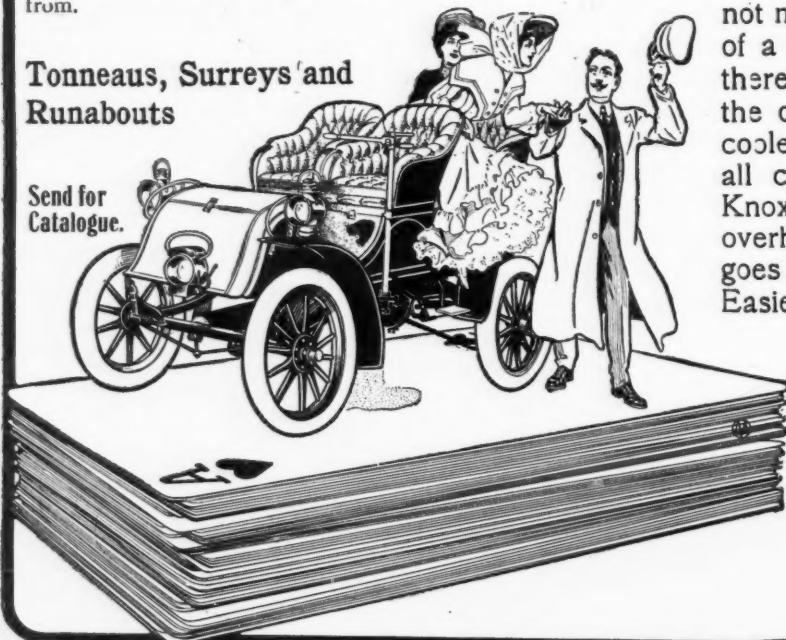
## ARE ALWAYS ON DECK

(THE CAR THAT OBVIATES THE TOW)

Six styles Passenger Cars and six styles Commercial Cars to choose from.

Tonneaus, Surreys and Runabouts

Send for Catalogue.



Knox mechanism does it. Built for use, not merely for show. Yet their beauty is of a rich, fascinating type. In the Knox there is no water to freeze in winter. Has the only high power engine successfully cooled by air. Keeps cool under every and all conditions ALL THE TIME, by the Knox patent system of air-cooling—no overheating in summer. If it's a Knox it goes and keeps going 365 days in the year! Easiest to control; easiest to ride in—

**It's the Palace Car of the Day**

There's luxury in running a Knox car.

**KNOX AUTOMOBILE CO.**  
**SPRINGFIELD, MASS.**

Member Association of Licensed Automobile Mfrs.

Selling Agencies in all the Principal Cities.



# MOTOR AGE

VOL. V. NO. 15

APRIL 14, 1904

\$2.00 Per Year

## FIFTEEN FINISH

## SERVICE TEST



**N**EW YORK, April 11—Fifteen of the seventeen vehicles which started in the A. C. A. commercial motor wagon trials last Monday survived the 6 days of service constituting the test. All the survivors made a showing for efficiency and rapidity of deliveries that cannot be gainsaid. A remarkable feature of the test was that there was but one case wherein there had to be an actual repair of essential machinery during the overnight stops in the garage. The Union Motor Co.'s truck had to have a connecting rod repaired on Thursday night. No other repairs were made to the other cars beyond mere oilings and adjustments.

Two starter alone—the Carlson Motor Vehicle Co.'s gasoline delivery wagon, No. 10; and the Consolidated Motor Co.'s Herschman steam truck, No. 18—failed to finish the contest. As stated in last week's report, the former was not completed until the morning before the contest and had to retire on account of overheated bearings. The Herschman truck through the neglect of an employe, had not been overhauled and was forced to withdraw because it did not steam right.

The express companies' officials decline at present to make any statement of results or give any expression of opinion of the comparative efficiency and economy of motor driven and horse drawn vehicles, as demonstrated by the tests. They will, however, enter fully into criticisms and comparisons in the statement they have agreed to prepare for the official report of the club's contest committee.

It will be remembered, though, that one of them was reported in last week's Motor Age as saying that the wagons for the most part were not

built with sufficient body capacity or convenience for the uses which the business of the companies demanded.

It was also noted that it was found impracticable for this reason for the express companies' shippers to load the wagons of each class uniformly to enable a fair comparison to be made. How widely varying were the loads of the wagons and, in fact, the loads that any one wagon carried in a single day may be seen from an inspection of the annexed summary of daily performances. It is hard to see, in view of this, how any fair tabulation of comparative results per ton, per mile, per day or per trip can be made. It would seem, therefore, that one would have to reach his conclusions of efficiency and relative merit by a study of the performances in detail rather than in toto.

That great rapidity of delivery and by inference from the almost utter lack of repairs needed, economy have been proven there seems little doubt.

Secretary Butler says that during the week of the test there were many inquiries made at the club as to the performance of the wagons, which would seem to indicate a very considerable and practical public interest in the test. The fine record of the Fischer gasoline-electric truck is reported to have won for its makers the reward of a large order from the Clausen Brewing Co.

Altogether the test seems to have been an eminently satisfactory affair, for while not permitting a close comparison of services rendered by the different vehicles, it was an excellent demonstration of the motor car's efficiency for such service; and in such demonstration of practicability of automobiles lies a greater good than in mere competition.



# A. C. A. TEST PERFORMANCES

## Record of the Last Half of the Week's Commercial Vehicle Service Trials—The Cars Carry Bigger Loads Than on the First Days—Many Service Stops Made on All Trips

The records of the wagons for the last 3 days so far as reported by the club's officials in advance of the contest committee's formal report follows:

### FOURTH DAY—APRIL 7—NO. 5

Charles Rockliff, No. 2—Route 4—Start 7:41; return 7:23; load 1,575 pounds; covered 37 miles; twenty-eight service stops.

Union Motor Truck Co., No. 3—Route 15—Start 8:23; return 6:25; load 2,700 pounds; covered 32 miles; twenty-five service stops.

Knox Automobile Co., No. 4—Route 11—Start 8:00; return 5:23; four trips; loads 490, 272, 155 and 162 pounds; covered 22½ miles; forty service stops.

Knox Automobile Co., No. 5—Route 8—Start 8:00; return 5:32; load 1,299 pounds; four trips; covered 47½ miles; fifty-six stops.

Knox Automobile Co., No. 6—Route 2—Start 8:15; return 2:00; load 1,670 pounds; covered 32½ miles; six service stops.

Olds Motor Works, No. 7—Route 12—Start 8:35; return 5:52; seven trips; covered 37 miles; thirty-four service stops.

Olds Motor Works, No. 8—Route 13—Start 8:00; return 5:20; six trips; varying loads; covered 34½ miles; twenty service stops.

Consolidated Motor Co., No. 9—Route 3—Start 8:10; return 5:25; five trips; load general merchandise; covered 52½ miles; forty service stops.

Pope Motor Car Co., No. 11—Route 6—Start 8:55; return 6:20; five loads; 340, 400, 590, 515 and 300 pounds; covered 23½ miles; thirty service stops.

Pope Motor Car Co., No. 12—Route 14—Start 8:15; return 7:10; covered 35½ miles; 100 service stops.

Lausden Motor Car Co., No. 13—Route 5—Start 8:13; return 6:30; loads 2,000, 2,000, 1,500 and 300 pounds; covered 26¾ miles; twenty-two service stops.

Electric Vehicle Co., No. 14—Start 8:50; return 4:30; covered 35 miles; load 1,915 pounds; ten service stops.

Electric Vehicle Co., No. 15—Start 8:24; return 7:15; covered 34¼ miles; loads 2,000, 3,300, 2,100 and 1,275 pounds.

Cantono Electric Tractor Co., No. 16—Route 11—Start 8:10; return 6:13; four trips; load general merchandise; covered 22½ miles; thirty-two service stops.

Fischer Motor Vehicle Co., No. 17—Route to Yonkers—Start 6:25; return 3:25; load 10,200 pounds; return laden with empties, 4,200 pounds; covered 32 miles.

### FIFTH DAY—APRIL 8

Charles Rockliff, No. 2—Route 5—Start 8:03; return 5:09; loads 1,100, 400 and 2,000 pounds; covered 22½ miles; twenty-six service stops.

Union Motor Truck Co., No. 3—Route 5—Covered 20¾ miles; twenty-five service stops; carried four passengers; loads 2,500, 1,200 and 1,500 pounds.

Knox Automobile Co., No. 4—Route 12—Start 7:55; return 5:06; five trips; loads 200, 300, 97, 162 and 178 pounds; covered 25 miles; thirty-three service stops.

Knox Automobile Co., No. 6—Route 3—Start 8:02; load 975 pounds; covered 58 miles; forty service stops.

Olds Motor Works, No. 7—Route 13—Start 8:17; return 6:12; seven trips; covered 55½ miles; thirty-three service stops.

Olds Motor Works, No. 8—Route 11—Start

8:10; return 5:28; five trips; covered 27¾ miles; fifty-six service stops.

Consolidated Motor Co., No. 9—Route 4—Start 8:25; return 5:55; four trips; thirty-eight service stops.

Pope Motor Car Co., No. 11—Route 13—Start 8:50; return 5:50; four trips; loads 300, 250, 478 and 695 pounds; covered 26 miles; thirty-four service stops.

Pope Motor Car Co., No. 12—Route 4—Start 8:10; return 5:50; four trips; loads 500, 400 and 125 pounds; covered 26½ miles; forty service stops.

Lausden Motor Car Co., No. 13—Route 7—Start 8:49; return 5:40; two trips; loads 100, 250, 600 and 715 pounds; covered 26¼ miles; thirty-four service stops.

Electric Vehicle Co., No. 14—Route 2—Start 8:42; return 6:30; two trips; loads 1,500 and 2,000 pounds; covered 34 miles; sixty-six service stops.

Electric Vehicle Co., No. 15—Route 7—Start 8:20; return 6:45; three trips; loads 1,185, 3,000 and 400 pounds; covered 26 miles; forty-two service stops.

Cantono Electric Tractor Co., No. 16—Route 9—Start 8:25; return 5:20; three trips; covered 24¼ miles; thirty-four service stops.

Fischer Motor Vehicle Co., No. 17—Route to Yonkers—Start 8:56; arrived Yonkers 9:18 without a stop; left Yonkers 11:13, arrived brewery 2:35; load going 50 half-barrels of beer; load returning 40 half-barrels of empties; covered 32 miles.

### SIXTH DAY—APRIL 9

Charles Rockliff, No. 2—Route 7—Start 8:25; return 6:38; three trips; load 550 pounds; covered 29 miles; thirty-two service stops.

Union Motor Truck Co., No. 3—Route 7—Start 9:02; return 4:14; load 1,700 pounds; covered 19 miles; twenty service stops.

Knox Automobile Co., No. 4—Route 13—Start 8:00; return 5:05; four trips; loads 104, 483, 176 and 243 pounds; covered 31½ miles; twenty-nine service stops.

## SERVICE TEST ROUTE SCHEDULE

ROUTE 1—Madison avenue depot, 8 a. m., to Jamaica, L. I., via Brooklyn bridge, 8 and 10 Fulton street; thence Dean street to 1400 Fulton street; Fulton street to East New York depot; Jamaica avenue to Jamaica, L. I. Returning via Richmond hill and Myrtle avenue to 106 Broadway office, thence via Williamsburg bridge to Madison avenue depot. Distance 30 miles.

ROUTE 2—Madison avenue depot, 8 a. m., to Flushing, L. I., via Brooklyn bridge, 8 and 10 Fulton street, 1129 Myrtle avenue; through Melrose street to Flushing avenue; Grand street and Brooklyn Heights railroad line, via Corona, to Flushing; returning via Brooklyn Heights railroad line and Grand street, to 106 Broadway, Brooklyn; then via the Williamsburg bridge to Madison avenue depot. Distance 25 miles.

ROUTE 3—Madison avenue depot, 8 a. m.—West side transfer service between Madison avenue depot and West 125th street, stopping at 683 and 315 Columbus avenue in both directions and repeat. Total distance 14 miles.

ROUTE 4—Madison avenue depot, 8 a. m.—East side transfer service between Madison avenue depot and 138th street, stopping at Seventy-second street and Third avenue and Eighty-sixth street and Lexington avenue and repeat. Total distance covered was 16 miles.

ROUTE 5—Baggage service—Grand Central station 8 a. m. First Trip—Leave Depew

place at 8 a. m., deliver baggage from Fourteenth street to Maiden lane, Fourth to Sixth avenues; West Broadway to Mott street. Second Trip—Leave Grand Central depot 12 noon; baggage to Pennsylvania railroad depot, foot of West Twenty-third street. Third Trip—Leave Grand Central depot 2:39 p. m.; baggage delivery to hotels, etc.; Forty-second to Tenth streets; Fourth to Sixth avenues. Total distance 14 miles.

ROUTE 6—Madison avenue depot, 6 a. m. Merchandise delivery. Fourteenth to Thirty-fourth street; Third avenue to East river. Repeat. Total distance 8 miles.

ROUTE 7—Madison avenue depot, 8 a. m. Transfer service between Madison avenue depot and 65 Broadway, making all offices south of Forty-seventh street; two round trips, then to office at Fourth street and Lafayette place for load to the depot. Distance 7 miles.

ROUTE 8—Madison avenue depot, 8 a. m. Merchandise delivery, from Forty-seventh to One Hundred and Tenth streets; Fifth avenue and Central park to North river. Repeat. Total distance 13 miles.

ROUTE 9—Madison avenue depot, 8 a. m. Merchandise delivery. Forty-seventh to One Hundred and Tenth streets; Fifth avenue and Central park, to East river. Repeat. Total distance 13 miles.

ROUTE 10—Madison avenue depot, 8 a. m. Package delivery, Twenty-third to Fifty-ninth

streets. Fifth to Seventh avenues. Repeat. Total distance 8 miles.

ROUTE 11—Madison avenue depot, 8 a. m. Package delivery. Fourteenth to Thirty-fourth streets; Fifth to Seventh avenues. Repeat. Total distance 6½ miles.

ROUTE 12—Madison avenue depot, 8 a. m. Package delivery. Fourteenth to Thirty-fourth streets; Second to Fourth avenues. Repeat. Total distance 6½ miles.

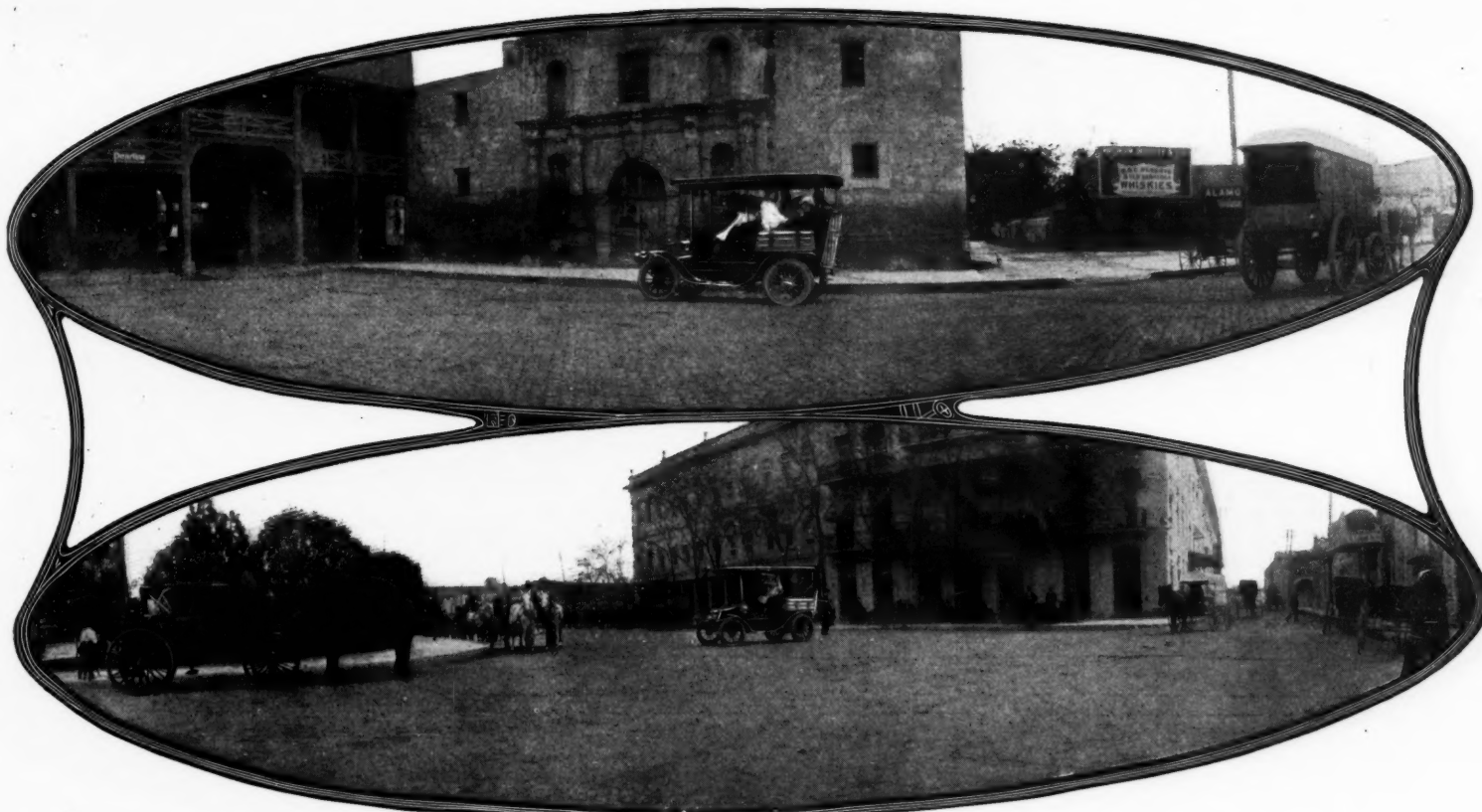
ROUTE 13—Madison avenue depot, 8 a. m. Package delivery. Houston to Fourteenth streets; Third avenue and Bowery to East river. Repeat. Total distance 8 miles.

ROUTE 14—Madison avenue depot, 8 a. m. Merchandise delivery. Fourteenth to Thirty-fourth streets; Seventh avenue to North river. Repeat. Total distance 9 miles.

ROUTE 15—Madison avenue depot, 8 a. m. Market delivery to Fulton fish market, bring load of fish from market to depot, then make trips between Madison avenue depot and 443 West One Hundred and Twenty-fifth street, stopping at 315 and 683 Columbus avenue in both directions. Distance 13 miles.

ROUTE 16—Madison avenue depot, 8 a. m. Market delivery of fish to Fulton fish market, bring load of fish from market to depot, then make trips between Madison avenue depot and One Hundred and Thirty-eighth street, stopping at Third avenue and Seventy-second street and Lexington avenue and Eighty-sixth street in both directions.





IN FRONT OF THE ALAMO, SAN ANTONIO

THE MOTORING PARTY IS E. HEATH AND FAMILY, OF CHICAGO

THE HOTEL MENDER, SAN ANTONIO, TEX

Knox Automobile Co., No. 5—Route 11—Start 8:00; return 5:42; three trips; loads 515, 100 and 450 pounds; covered  $23\frac{3}{4}$  miles; fifty-nine service stops.

Knox Automobile Co., No. 6—Route 4—Start 8:15; return 5:30; four trips; load 1,000 pounds; covered  $49\frac{7}{8}$  miles; thirty-two service stops.

Olds Motor Works, No. 7—Route 11—Start 8:15; return 6:22; four trips; covered  $38\frac{1}{2}$  miles; fifty-eight service stops.

Olds Motor Works, No. 8—Route 12—Start 8:05; return 5:40; seven trips; covered  $37\frac{3}{4}$  miles; forty-six service stops.

Consolidated Motor Co., No. 9—Route 5—Start 8:05; return 5:02; three trips; first load 1,915 pounds; covered  $21\frac{3}{8}$  miles; thirty-one service stops.

Pope Motor Car Co., No. 11—Route 14—Start 8:35; return 7:20; loads 500 and 720 pounds; covered  $40\frac{5}{8}$  miles; fifty-nine service stops.

Pope Motor Car Co., No. 12—Route 13—Start 8:40; return 5:35; load 700 pounds; covered  $29\frac{5}{8}$  miles; thirty-five service stops.

Lansden Motor Car Co., No. 13—Route 1—Start 8:25; return 7:15; three trips; loads 1,970, 1,200, 1,200 and 770 pounds; covered  $36\frac{3}{8}$  miles; ten service stops.

Electric Vehicle Co., No. 14—Route 3—Start 8:25; return 4:51; three trips; first load 1,140 pounds; covered  $33\frac{1}{2}$  miles; twenty-one service stops.

Electric Vehicle Co., No. 15—Route 5—Start 8:05; return 6:40; three trips; loads 3,400, 1,500 and 2,500 pounds; forty service stops.

Cantono Electric Tractor Co., No. 16—Route 6—Start 8:00; return 6:05; first load 1,600 pounds; covered  $23\frac{3}{4}$  miles; forty service stops.

Fischer Motor Vehicle Co., No. 17—Route to Jamaica—Start 6:25; arrived 10:20; load 48 kegs of beer, weight 9,600 pounds, and five men; returned with 37 empties, weight 2,600 pounds, and six men; distance covered 32 miles.

#### PASS GOOD ROADS BILL

Providence R. I. April 11—The good roads bill, which authorizes the appropriation of \$100,000 to be used in building highways in various parts of the state, has passed the senate and house, much to the gratification of the automobilists. The policy of building and maintaining state roads, which has been carried forward so successfully in Massachusetts and New Jersey, was commenced in Rhode Island a few years ago, and since that time short stretches of excellent roads have been built under the supervision of a competent engineer and the money which has just been provided will allow this work to go on for another year at least. The sum of \$125,000 was asked for by the state board of public roads, but politicians found that a cut had to be made in many estimates as the session drew near its close, and the good roads bill was one of those to suffer.

The Kane automobile bill, with its many freak amendments, has been buried apparently somewhere on the road between the house and the senate, and there were few mourners at the interment. In all probability nothing more will be heard of this measure, and there seems to be an opinion among automobilists that the move that was made primarily in the interests of political strategy will be of great benefit to all of the many followers of the sport of automobiling who enter the state. No open opposition has been offered by motorists to legislation, but there is a feeling here that it is almost unnecessary and that within a few years a law of this character would be nothing but an incumbrance on the statute books.

Some time ago a suggestion was made by President Julian A. Chase, of the Rhode Island Automobile Club that this organization unite with the Massachusetts Automobile Club of Boston in supporting a rendezvous somewhere between the two cities. It was said that such a place, suitably fitted up, would be a great convenience to all automobilists on the way from Providence to Boston, and as this is one

of the roads over which tourists from New York and other places along the Atlantic coast have to go on the way to the White mountains in New Hampshire and the Maine watering places, the number expected to take advantage of it would be considerable. Recently President Chase and the president of the Massachusetts organization have been making a personal investigation and have looked at a number of pieces of property that might be used for this purpose. When they have decided on a location they will probably obtain an option on the property and will then lay the whole matter before their respective clubs. The action taken by the American Automobile Association in New York last week in endorsing a plan for the amalgamation of that organization with the American Motor League is approved here by all who have followed the careers of the two societies. The Rhode Island Automobile Club is a member of the A. A. A., and some of the men now in the automobile industry here were prominent in the formation of the L. A. W. some years ago and they know the difficulties of managing such national clubs, and the recent move of the A. A. A. seems to them to be in the right direction. H. H. Rice, now the secretary of the Rhode Island Automobile Club, was one of those who opposed, when the A. A. A. was being formed, the plans then made for making it exclusive and he says that there would probably never have been a division in the ranks of the automobilists if a more liberal policy had been adopted in the first place. He says that there will be undoubtedly a very vigorous plan of action carried out if Isaac B. Potter becomes the secretary of the proposed American Motor Association and he thinks that the sport will be very much benefited by the change. Mr. Rice says that the new organization should have a membership of something like 40,000 in the next few years. Little Rhode Island will probably furnish as much enthusiasm to the square mile as any state and Providence is likely to become a strong American Motor Association center.

# MOTOR AGE

Published Every Thursday by  
THE TRADE PRESS CO.

1303 MICHIGAN AVENUE CHICAGO  
Telephone Calumet 7011

New York Office, 134 West 38th Street.  
London Office, American Publication Bureau,  
58 Manor Park Rd., Harlesden, N. W.



Entered at the Chicago Post Office as Second  
Class Mail Matter

Subscription, Two Dollars per Year  
Foreign Subscription, Four Dollars

Any Newsdealer may obtain Motor Age through  
the Western News Co., Chicago, or any  
of its branches, on a returnable basis

## POWERFUL TOYS

IT is becoming a fad among rich men to establish automobile racing stables much on the lines of horse racing stables, except that the gambling features of the latter are not possible. Fast automobiles are purchased and turned over to hired drivers to be raced for glory and cups. The owner gets the cups and the maker and driver of the car get the glory.

It is hardly possible to see how a man by simply playing the check book role becomes an active part of the automobile racing game. He may do it good by supplying entrants. Soon he will not be needed. What is he in it for? Presumably not as a philanthropist, contestant or for personal credit. It must be for the sake of pride of ownership of a good thing. His racing success is his car; he paid for it. Some one else designed it, built it and drove it. He bought it. Like the child with a new toy hugged tightly, the right of possession is strong in him. It is his little fad to be the possessor of winners. It is more credit to be a Harkness, Bostwick, Vanderbilt and drive as well as own the mediums of the new speed sport.

Besides, when a man is nothing but owner, his racing chauffeur's name, not his, is likely to get the newspaper publicity of the thing.

## FARMERS AND MOTORS

ELSEWHERE in this issue of MOTOR AGE is a picture of an Illinois farmer's wagon after a trip "to town." It is one of the best possible examples of the effect of poor roads on rural commerce. It is a picture that could be taken a thousand times a day in a thousand vicinities. It depicts ordinary rural travel as it is at certain times of the year. It presents an actual daily condition that exists all over the country. It represents the country's disgrace.

The farmer in the picture does not think this is a joke. He is tired of the kind of travel illustrated. He has had too much of it. He will present this picture to a good roads convention soon to be held at the Illinois state capital. He is a progressive farmer and knows the extent to which poor roads are wasteful of energy, time and money. But at the same time that such farmers as this Illinois man are crying out for decent roads other

farmers all over the country are spending all their power in crusades against modern means of transportation—against the motor car. Standing knee deep in the mud their forefathers stirred up on the way to market and which has never been settled since, hundreds and thousands of rural bigots shake their fists at all motorists with the angry cry: "You scare my horse; get off my highway."

Yes, Mr. Farmer, it is your highway, and a disgrace to you who made it and have so jealously guarded it against improvement. But motorists will not keep off any more than did the cyclists you once ran into the ditch. The road is for all. Your mortgage has expired. Improvement in roads is just as certain as improvement in vehicles and the motive power which is revolutionizing vehicles will revolutionize roadmaking.

Automobilists are among the chief advocates of good roads. They seek to construct a system of highways that will do you, Mr. Farmer, more good than it does them. They are not your enemies. No bigotry can make them so. They are ready and anxious to co-operate with you. Shall your co-operation be given, begged, stolen or forced. It is up to you.

❖ ❖

Once in a while an advertising agency kicks because it cannot get its "press notices" in trade papers. Here is a sample of the kind of "slush" advertising agencies often ask to be printed: "The immense business done at the plant of the — company is certainly evidence that this company is doing a wonderful business."

❖ ❖

The first farmers' organ to awaken to the utility of the automobile in agriculture is the American Agriculturist and an editorial in the last issue presented the case very intelligently. It advised farmers not to turn up their noses at the automobile because its possibilities exceed all dreams.

❖ ❖

In Chicago you must have a number. You can enjoin the city against forcing you to get a license. Without a license the city will not issue a number. Good chance for street fakers to introduce automobile tags at three for a quarter.

❖ ❖

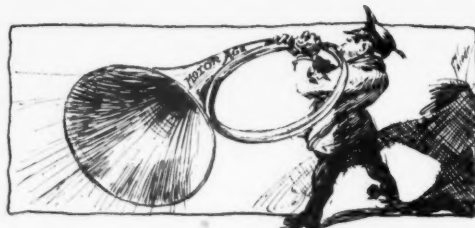
Now then, let's all learn to say it—Gobron-Brillie—Go-braw Brill-yea—the more than Mercedes car—the little 120-horsepower run-about with which Rigolly at Nice made five proud Cannstadt flyers look like 30 pfennig.

❖ ❖

New Jersey is exclusive. Automobilists may carry no numbers but Jersey numbers while in the state. This is the first time on record automobilists have been requested *not* to carry all the numbers they can tack on their cars.

❖ ❖

The McHenry County Automobile Club, of Illinois, has one president, one secretary, one treasurer, one attorney and eight vice presidents. This is a handy way to satisfy all office seekers.



The commercial vehicle test under the auspices of the A. C. A. started in New York Monday, April 4. In their issues of last week the weekly automobile papers covered the story as follows:

The Automobile, of New York—Story of the trials on Monday and Tuesday.

The Horseless Age, of New York—Story of the trials on the first day, Monday.

Automobile Topics, of New York—Story of the trials on Monday and Tuesday.

The Motor World, of New York—Story of the trials on Monday, Tuesday and Wednesday.

The Automobile Review, of Chicago—Story of the trials on the first day, Monday.

MOTOR AGE, of Chicago—Story of the trials on Monday, Tuesday and Wednesday.

Besides MOTOR AGE only one paper published the story up to Wednesday night and that paper was a New York paper. MOTOR AGE beat three New York papers on an important event in their own city.

❖ ❖

No person would think of writing to a trade paper asking it to make, free of charge, a drawing and cut of some article of manufacture. Such a request would be foolish. The approved method is to write to the trade paper asking that the said article of manufacture be illustrated and described; then after the description appears, to write again stating that inasmuch as the cuts have served their first purpose and are of no more use to the trade paper, will it please donate them to the maker of the said article of manufacture. This method is more diplomatic, and besides, two birds are killed with one stone.

❖ ❖

King Edward of England is said to delight in embarrassing "bobbies" by motoring in an unnumbered car that he may be halted only to tell the unfortunate policeman who he is. The king must be a distant relative of Colonel Pope.

❖ ❖

Some Berlin automobilists have patent numbers which can be changed with lightning rapidity on the approach of a policeman. This is almost as funny as some of the jokes in the Fliegende Blätter.

❖ ❖

If this Y. M. C. A. automobile school system continues to increase, the daily paper alleged jokers are apt to substitute chauffeur for Christian in the association's name.

❖ ❖

The sad part of being an expert mechanic in an automobile factory is that one cannot have so much fun as a cheap chauffeur.

❖ ❖

Hippodrome automobile racing was given a slap in the face at Memphis, Tenn., last week for wishing to break the sabbath.

❖ ❖

City parents all over the country have the spring fever. For that motor licensing itch take a dose of Chicago injunction.

❖ ❖

Ninety-five miles an hour by Mr. Rigolly must have given Mr. Jenatzky one of those awful headaches.





1903 Touring Car  
1901 Tonneau  
1898 Delivery Quadricycle  
1898 Runabout

1902 Touring Car  
1904 Limousine

1903 Chicago-New York Record Car  
1900 Runabout  
1899 Runabout  
1899 Runabout

## GLORY FOR GOBRON-BRILLIE

### Rigolly and Duray Clean Up the Nice Race Meeting—Much to the Disgust of Five Mercedes Stars, They Win the Speed Trials and the Two Rothschild Races and the de Caters Cup

Nice, France, April 1—Flying kilometer in 23 3-5 seconds—95 miles an hour—the Mercedes dethroned—Gobron-Brillie king. This is the feature of the 1904 Semaine de Nice, ended today.

There was only a few hours of actual racing in the 2-day speed tournament which closed the week of touring, hill-climbing, floral parades and social gayety. There were only eighteen contestants altogether in the speed battles, but the sport was swift and close, and the performers the continent's best. The spectators were many and enthusiastic and the whole thing was a quickly-made sensation in European motoring—a shattering of records and ideals and a making of new speed gods, nothing doing in the goddess line, Madame du Gast being among the absentees. Rigolly, with the new 100-horsepower Gobron-Brillie, was the star and three times yesterday he smashed the flying kilometer mark.

The triumph of Rigolly ranks him with the premier drivers of Europe in speed contests, and is also greatly to the credit of the makers of the Gobron-Brillie, who entered the automobile trade with the intention of sooner or later making the fastest cars in Europe. They have succeeded after a hard struggle with much older makers; they have produced a car which has travelled faster than any other automobile on earth. Much was expected of the new Gobron-Brillie, which, according to statements from the factory, is a 120-horsepower machine, originally expected to average about 88 miles per hour. In the three trials yesterday the car developed respectively 87½, 93¼ and 95 miles per hour. The record breaker was built for the purpose of competing in the French international cup race eliminating trial, and should it make an equally good showing in that difficult road test, France should have an excellent chance of winning the much desired Bennett cup.

The Mercedes was given a severe whipping by this fast monster of Rigolly's, as well as by the new English Napier, brought over to test its speed. Five Cannstadt cars, with five of the world's best professional drivers, were entered for the meeting, and the French and English were uneasy over the outlook of battling Gobron-Brillies and one Napier against this quintet of famous speed merchants.

But Duray and Rigolly, on the Gobron-Brillie, cleaned up the program, between them capturing all the firsts and seconds, while Mark Mayhew, on the 100-horsepower Napier, beat the German out of third place in the two most important of the four events. This left Werner with two thirds as the only Mercedes driver to show. Even that fearful and wonderful Jenatzy swelled the ranks of the also rans. After the races the Mercedes crowd suddenly remembered that their beaten cars were not of the latest pattern. The Napier, while not winning, made an excellent impression, and the wise ones put it down on their list of dangerous competitors.

Good weather favored yesterday's meeting. From early morning until the hour of the start of the races crowds of people thronged the ex-

tension of la promenade des Anglais, where the events were to be run. It was a select assemblage of well-dressed men and women, manufacturers and dealers, officials and nobility, many foreigners and a sprinkling of that variety of person known as the ordinary on-lookers. Gendarmes and gardiens de la paix were plentiful to keep order and the affair was carried on smoothly.

The kilometer record was broken four times, and Duray, who held the previous record, which was 26 3-5 seconds, was able to bring the record down to 25 1-5 seconds with the same car. Rigolly, who made the other three cuts in the record, averaged a speed of 87½ miles per hour when he covered the distance in 25 3-5 seconds, 93¼ miles per hour in the trial in which he covered the kilometer in 24 seconds, and 95 miles per hour in the trial resulting in 23 3-5 seconds. If, instead of stopping at the end of the last kilometer, Rigolly would have continued to complete a flying mile at the same speed, the time for that one mile would have been 37 4-5 seconds, or a cut of 1 1-5 seconds of W. K. Vanderbilt's record of 39 seconds.

The old mile standing start record of 58 4-5 seconds, which was held by Rigolly, was broken three times, both Rigolly and Duray clipping off 5 1-5 seconds and Werner 1 second from the former mark. The astonishing feature in this event was that Duray, on Rigolly's last year's car, equalled the time made by the latter on his new machine.

These times furnished an interesting comparison with those of last year's tournament. Then Braun, on a Mercedes, made the standing start mile in 1:03¾, while Hieronymus, on a Mercedes, won the flying kilometer race for the Rothschild cup in 31¾ seconds.

The summary of the 1-mile standing start speed trials, in which, also, the flying start kilometer was timed, is as follows:

Motor bicycles—Tamagni, Marchand machine; mile in 1:07¾; kilometer in :38. Lamberjack, Griffon machine; mile in 1:09, kilometer in :39¾.

Motor trieycles—Tamagni, Marchand machine; mile in 1:15; kilometer in :43.

Voiturettes—Deletang, Passy-Thellier car;

mile in 1:42; the flying kilometer in 55 3-5.

Voitures Leges—Durand, Mors car; mile in 1:21 3-5; kilometer in 44 3-5. Neitham, Decauville car; mile in 1:33 1-5; kilometer in :48 2-5.

Voitures—Rigolly, Gobron-Brillie car; mile in :53 3-5; kilometer in :25 3-5. Duray, Gobron-Brillie car; mile in :53 3-5; kilometer in :26 3-5. Werner, Mercedes car; mile in :57 4-5; kilometer in :30 3-5. Jenatzy, Mercedes car; mile in :59 1-5; kilometer in :30 1-5. Fletcher, Mercedes car; mile in 1:01 1-5; kilometer in :30 2-5. Braun, Mercedes car; mile in 1:01 4-5; kilometer in :30 3-5. Mark Mayhew, Napier car; mile in 1:03; kilometer in :32. Warden, Mercedes car; mile in 1:03 3-5; kilometer in :30 2-5.

The summary of the speed trials of voitures for the second Henri de Rothschild cup, over 1 kilometer, flying start, is: Rigolly, Gobron-Brillie car, :24; Duray, Gobron-Brillie car, :26 3-5; Mark Mayhew Napier car, :28 3-5; Warden, Braun and Werner all on Mercedes cars, each :29 2-5; Fletcher, Mercedes car, :29 4-5.

The summary of the speed trials for the third Rothschild cup, over 1 kilometer, flying start, is: Rigolly, Gobron-Brillie car, :23 3-5; Duray, Gobron-Brillie car, :25 1-5; Mark Mayhew Napier car :27 1-5; Braun, Mercedes car, :29; Werner, Mercedes car :29 1-5; Jenatzy, Mercedes car, :29 3-5; Fletcher, Mercedes car, :29 4-5; Warden, Mercedes car, :30 2-5.

The only event on the program today was the hill-climbing test for the Baron de Caters cup. Two years ago, when the event was run the first time, Leon Serpollet won it on his famous steamer, doing the 1,000 meters on the 10 per cent grade in 59 1-5 seconds. Last year Rigolly won it, covering the kilometer in 50 1-5 seconds. Today his team mate, Duray, won the contest, which, however was over a distance of only 500 meters on the steepest part of the Pin hill, as it is familiarly called here. The same car with which his companion won the trophy last year was driven by him, and he covered the distance in 26 seconds.

The summary of this race is: Duray, Gobron-Brillie car, :26; Rigolly, Gobron-Brillie car, :27; Werner, Mercedes car, :28; Braun, Mercedes car, :28 3-5; Mark Mayhew, Napier car, :30; Fletcher and Jenatzy, Mercedes cars, each :30 1-5; Warden, Mercedes car, :32 3-5; De Cesti, Mercedes car, :36 3-5.

Ancel, on a Peugeot motor cycle, covered the same course 1-5 second faster than Tamagni on a Marchand machine, making the 500 meters in 41 4-5 seconds.



MOTOR AGE

AUTOMOBILE CLUB RUN AT MELBOURNE, AUSTRALIA



## THE MERGER IS FAVORED

### Consolidation of A. M. L. and A. A. A. Meets Practically No Opposition—Potter Praised

New York, April 7.—Commendation of the common sense and courage of the conferees of the A. M. L. and A. A. A., which is to bring about the consolidation of the two into one grand national body, continues. It is practically unanimous save in one quarter, where personal prejudice and animosity are recognized by all as the sole grounds of persevering and peevish opposition to a move universally recognized as being for the weal of automobilism and automobilists in this country.

President Potter, of the A. M. L., has made enemies in his long career in national sport organizations, as was natural should be the case with such a hard, hustling fighter as he is. With the single exception noted, even his former bitterest critics are congratulating the new body in its acquirement of such a successful recruiting sergeant and masterful organizer to take charge of this branch of the new association's work.

When Mr. Potter took up the L. A. W. presidency that body had but 70,000 members. When he quit the leadership to resume his law practice it had attained a membership of 103,000 and had a bigger balance left in the treasury than at any time during its history, despite the fact that it had out on loan to the state divisions \$13,000.

As Mr. Searrett remarked at the A. A. A. meeting which approved of the merger he, President Whipple and John Farson had arranged, "If Potter be a wrecker then we wish he would wreck the A. M. A. as effectively as he did the L. A. W. by raising its membership of 30,000 to the high water mark of its history. His raising of the A. M. L. in one year from practically a new organization on paper to a body having members in forty-four states and over 600 cities and towns proves that Potter has lost none of his old-time enthusiasm and recruiting ability. The innuendoes cast out by this lone, last-ditch opponent of merger that the A. M. L. is made up largely of bicycle riders and other outsiders are refuted by the fact that 95 per cent of the A. M. L. members are automobile owners, despite the fact that the membership was thrown open to all interested in any way in the advancement of automobilism and the attainment of good roads. This is a larger percentage of car-owning members than ever some of the clubs have."

Mr. Potter, interviewed on the work and prospects of the new national body, said in part:

"In accordance with the arrangement made by the conferees, the A. M. L. is about to send to each of its members a concise, explanatory letter, stating the terms and purpose of the merger and asking each member to express his approval or disapproval of the amalgamation. I have no doubt that our friends of the A. A. A. are pursuing a like course.

"From many letters already received from A. M. L. members I may safely forecast the result, for these letters give practically unanimous consent so far as we are concerned. Moreover, these letters, in many cases, are from those who are members of both organizations. As to the future work of the amalgamated

body I hope to confer with President Whipple as soon as the union is completed. From conversations already had with him and with others prominent in the A. A. A. I can say that our ideas as to the future scope of endeavor and general outline of recruiting and organizing work are in entire harmony.

"The adoption of the more comprehensive title, 'American Motor Association,' and the assumption of speed boat jurisdiction by its racing board, opens a wide and promising field for recruiting. The motor boat owners are as much in need of an organization to conserve their rights on the water as the automobilists are on land. Bills have been introduced twice in congress to compel them to employ licensed engineers, which defeats the whole idea of amateur pleasure and speed launching.

"Of most enormous value to the new association is the splendid work now being done by Augustus Post, who is a member of the national touring committees of both organizations, in arranging the routes and details of the grand tour to St. Louis. His work already has brought many inquiries by letter. The work done by the A. M. L. in the same direction



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PROVING IT IS HERCULES

will, of course, be used to supplement the results already attained by Mr. Post in the same direction. The secretary's office will give Mr. Post's committees every assistance in this great tour, which will be the first great accomplishment of the new national body and give it a valuable standing before the public and legislation in many states.

"When the amalgamation was under consideration all hands were unanimous that A. R. Pardington and his associates were the only ones to be considered for an instant as the directors of national automobile racing. His administration last year did much to make the public realize the importance and usefulness of the A. A. A."

### HIGH TIME IN FRENCH CAR

Los Angeles, Cal., April 5.—Considerable merriment of late has been noticed about the garages over the escapade of two well-known chauffeurs. They took a big French car out of the garage at Pasadena Saturday night and drove it over to this city, where they picked up two women, who were wives of men at the races here, and in company with a sport with money to burn made a night of it, ending up at 4 o'clock Sunday morning with one of the women trying to run the car up the steps of a local bank building. A Los Angeles policeman arrested the outfit and the five were taken to the city jail.

## AUSTRALIA HAS PARADE

### Large Crowd of Motorists Drive Cars Through Melbourne and Near-by Towns—Americans Lead

Melbourne, Australia, March 2.—The first club run of the recently-formed Automobile Club of Victoria took place a few days ago and the event is well worth reporting to an American friend on account of the rather large number of American-made motor cars which participated in the affair.

The weather man just happened to feel good and favored our community with a most enjoyable temperature, after several days of nasty, rainy weather. Nearly forty of the 104 members of the club had responded to the call of the secretary to be present at Prince's Bridge on Alexandra avenue at 2:15 in the afternoon, and while it might seem but a small percentage for a club which has over the hundred in membership, it is, nevertheless, a fair showing for a first event of the kind and the enthusiasm of the participants fully made up for the lack in number.

The crowd along the line of march was large indeed, if you know how skeptical the people are down here at running out of their way to see something they never saw and about which they are in doubt as to whether they will enjoy it or be disappointed. The cars proceeded through St. Kilda, East Brighton, Cheltenham, and Mordialloc, and Aspendale park, the end of the excursion, was reached at 3:30. There was no great speeding to get there, the intention being rather to make it as much as possible a show affair, a moving exhibition of cars moved without horses, and the success was complete in this direction, the people along the route being able to get a good glance at the different machines, and one could very plainly hear many remarks about the vehicles.

After a few hours of rest, during which a delightful lunch was served, most of the motorists present again formed in line and returned to Melbourne, which was reached about 6 o'clock.

Those who took part in the run were: Dr. A. P. Merrill, Winton; Otto Schmacher, de Dion-Bouton; W. J. Warden, Oldsmobile; F. Bennett, Toledo; Sydney Scott, Decauville; D. McKenzie, Oldsmobile; J. R. Crooke, Locomobile; Dr. B. Grimwade, Humberette; N. Grimwade, de Dion-Bouton; J. Beswick, Locomobile; Dr. Officer, Oldsmobile; J. Moffatt, de Dion-Bouton; W. S. Rose, Argyll; H. Tarrant, Argyll; P. Moffat, de Dion-Bouton; W. Hurst, Eclair; Frank Stuart, Decauville; E. C. Winn, Oldsmobile; F. McGinnis, Oldsmobile; H. Thomson, Thomson; J. Prince, Winton; C. B. Kellow, de Dion-Bouton; H. H. Whitt, Locomobile; W. Gould, de Dion-Bouton; S. Darby, Toledo; A. Renard, Rochet; H. Stevens, Knowles-Astor; C. Bohinke, Oldsmobile; C. Waddington, Oldsmobile; H. J. Maddox, Knowles-Astor; C. A. Proctor, Orient buckboard; J. Neave, Oldsmobile; Scott, Jr., Covert; and C. Hall, Oldsmobile.

The large number of American automobiles which took place in the Aspendale run must not be considered extraordinary, because the Yankee agents of the American manufacturers or the local agents handling their cars are pushing them for all there is in them, and furthermore they are lighter, of better appearance, and less expensive than English or French cars. The only strong competitor on the local market is the de Dion-Bouton, but the Oldsmobile is really the most popular car around here.

# CHICAGOANS FIGHT TAGS

## Automobile Club Takes Up Cudgel In Behalf of Its Members— Injunction Against City Is Sought By the Club To Prevent Enforcement of the Ordinance Declared Invalid

Chicago, April 13—The Chicago Automobile Club has taken up the cudgel in behalf of its own members, and has swung the same with determination, the immediate object upon which the blow fell being the city's license and number-tag ordinances. The time for the renewing of the licenses seems to have come synchronously with the spring awakening of automobilism.

The attention of the city hall people was directed to the fact that many automobiles were running without licenses and without tags and determined to enforce the letter of the law—which the courts had called invalid—by wholesale arrests of the parties driving or owning machines.

Relief from this condition of affairs was suggested by the automobile club's attorney, Sidney S. Gorham, a member of the law firm of Mills, Gorham & Mills, who used the now famous Banker injunction against the city as the instrument whereby to attain the ends desired. On Saturday Mr. Gorham filed a petition before Judge Brown of the Circuit court asking the same right as had been granted to Mr. Banker when the latter won his injunction suit from the city nearly a year ago. The petition was granted for the following members of the club: John Farson, president; Dr. F. C. Greene, first vice president; I. M. Cobe, F. X. Mudd, W. G. Lloyd, F. C. Donald, T. J. Hyman, J. A. Ellis, directors; and F. H. Davis, W. H. Hoops, I. V. Edgerton, C. E. Bartley, H. Pam and Sidney S. Gorham.

As a matter of fact the above-named members were all that Mr. Gorham could reach over the telephone on Saturday, as it was necessary to have the personal consent of each individual before filing a petition in his behalf.

Today Attorney Gorham filed a bill of restraint on behalf of another club member, I. V. Edgerton, who was arrested yesterday for driving an automobile without a number. An injunction was issued against the city and now it is the intention to make other club members party to this bill in order to bring them under the effect of the injunction.

It is now proposed to file a petition on behalf of all club members. Notices to this effect have been sent to each member in the city. The club now proposes to secure for each and every one of its members immunity from arrest for the violation of what it considers an unjust and invalid law.

Mr. Gorham said yesterday: "The club has no idea of seeking to secure immunity from arrest for scorching or otherwise breaking just laws, but merely relief from the license and tag regulations, which are not considered just, as at present on the books, and I think some system of registration of automobiles is proper and even desirable and that the city and club will soon agree upon some such method."

The injunction on which the Chicago Automobile Club rests its position was granted to A. C. Banker, dealer in automobiles, on June 9, 1903, and restrained the city and its board or agents from arresting or preventing the complainant or other persons similarly situated with him from running, driving or propelling an automobile within the corporate limits of

Chicago, without first having secured a license to do so."

Going a little further back into the history of the case, Mr. Banker had had his license revoked for alleged too fast driving in the city. For that matter, Mr. Banker did not deny that he had exceeded the speed limits a bit, although that has little to do with the case. His license to operate an automobile was taken away from him and Mr. Banker, being a dealer, found it impossible to gain his livelihood without running an automobile.

So he took the matter into the courts and the courts sustained him.

There were two ordinances which had stood in the way of Mr. Banker and more recently in the way of the rank and file of motor car owners in Chicago. The first was the license ordinance, which was adopted June 30, 1902. This act compelled drivers or owners of machines to take out licenses for the same. The second was passed June 8, 1903, almost a year later, and stipulated that owners of machines must carry identification number tags, each to correspond with the number of his license.

The police say that they rest their case on the "livelihood" part of Judge Healy's decision in favor of Banker nearly a year ago, when that jurist decided that Banker could



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BOAT CLUB LEASED BY C. A. C.

not be kept from operating an automobile, as that would be "taking away a man's means of livelihood."

The situation seemed critical when on Monday Sergeant Ward of the vehicle department of Chicago had six detectives out "scouring the city for violators of the ordinance," but none could be found. It rained Monday and this was given as the excuse, but inasmuch as there were plenty of untagged machines hurrying up and down Michigan avenue it must mean that Sergeant Ward's men themselves were afraid of the wet.

Attorney Gorham said yesterday he expected that he and Assistant Corporation Counsel Granville W. Browning, who has represented the city throughout in the matter, would meet in the near future and frame an ordinance which would fit the case and do injustice to neither side.

"The city should adopt an ordinance providing for the registration by owners of a description of their cars," said Mr. Gorman yesterday, "and the adoption of an initial or a monogram or some distinctive emblem which should be registered as the emblem of each

particular car. I believe it would meet with the hearty approval of the officers and members of the club who are entirely in favor of restricting the use of automobiles within proper and reasonable limits."

Just now while this legal movement is on foot, club members are desired to take out licenses and carry numbers to prevent an undue agitation until the club has done all it can to bring about an equitable settlement of affairs, and notices have been sent to all members to that effect.

Directors of the Chicago Automobile Club held their regular meeting at the club house on Monday. The efforts of Attorney Gorham in behalf of the club in the license matter were warmly seconded and that gentleman was forthwith elected secretary and a director of the club in the place of J. W. Duntley, resigned.

The directors approved the plan of the house committee for the leasing of the Evanston Boat Club house as a "sub-station" during the season. The new rendezvous on the north shore is a handsome, roomy structure and well furnished. A steward will be installed and every means taken to provide for the comfort of the automobilists. It is planned to have music by a capable orchestra at the new Evanston headquarters at least twice a week, and thus to make the trips along the Sheridan road and the north shore a distinctive feature.

The directors also approved the plan for the enlargement of the club garage. An awning, partly of asbestos, will extend from the present building out to the street entrance. It is thought that in this way the capacity of the garage for storage will be almost trebled.

The run to Indiana Harbor as the first trip of the year has been given up. The event was scheduled for last Saturday, but the bad weather and worse roads compelled the abandonment of the scheme. Instead, weather permitting, the club will go to Riverside, stopping enroute at the home of John Farson, president of the club. It is felt that this will be an improvement all the way around over the proposed Indiana Harbor trip.

### SCHOOL IN DETROIT

Detroit, Mich., April 12—The Y. M. C. A. automobile school project, which has sprung up in the land, was inaugurated in Detroit last evening when the first of a course of six lectures at the newly organized Association Institute Automobile School was delivered before a goodly audience by H. M. Coffin, of the Olds Motor Works.

Mr. Coffin selected the following divisions of the general subject for the first night: Outline and object of the course; a bit of automobile history; lines of development up to the present; stereopticon views showing the evolution of the modern automobile; motive powers briefly; principle of the internal combustion engine; the four-stroke cycle and two-stroke cycle, and the advantages and disadvantages of each.

The five following lectures will take up the hydro-carbon motor in its various forms, and six styles of automobiles and engines will be exhibited. All the different machines manufactured in Detroit will be shown by experts from the respective factories.

Dr. A. G. Studer, secretary of the Y. M. C. A., says that this course will be only a preliminary one and that the association plans great things in the automobile line for next year. It is thought by that time to arrange for a full 5 months' course.



## LAST CALL FOR ENTRIES

### A. C. A. Extends Date of Application for Positions on American Cup Race Team—Race Talk

New York, April 13—Another chance is to be given American owners and makers to be represented on the American team in the international cup race. Following a meeting yesterday afternoon and conferences this morning the A. C. A. racing board announced that entries to the American team had again been thrown open and would remain open until May 1, when all the candidates must be on hand ready for inspection and trial.

The reason given for the reopening of the entries is that the withdrawal of the Sampson car left a vacant place on the team. This gave the committee the technical right to throw the entries open to supply a third member to the team. The committee declines to discuss the technicalities of the situation further and practically stands on its announced action alone. It says it does not propose to cross bridges until it reaches them.

There is a strong underlying confidence among the racing and manufacturing fraternity that the committee does not propose to have this country represented otherwise than creditably and will leave no stone unturned to send over a really representative team. It is suggested that the committee has perhaps received offers from other racing car makers to enter or at least has in mind one or more cars already built that trial might prove available and worthy of endorsement.

A hasty guess at possible entries would embrace the Winton Bullet, now proven a great speed machine; the Packard Gray Wolf, which holds the world's middleweight straightaway mile record; the Buffum eight-cylinder car now in this city; the Ford 999, a record breaker; and the Smith & Mabley Simplex, now in course of construction.

Barney Oldfield is in town endeavoring to effect a reinstatement by the racing board of the American Automobile Association. He says he is sorry for his misdeeds and admits he made a mistake in riding at unsanctioned meets, but professes that his riding at Savannah, Ga., was merely an exhibition and that the Birmingham, Ala., meeting did not take place. He further protests that losing his position with the Winton company was punishment sufficient.

Oldfield, in discussing the racing situation generally, says that the Packard company offers to build him a new racer and that the Peerless company wants him to drive its car in the international cup race. The Peerless car, he says, is due to be finished today, while two other cars are well along in course of construction. Also, according to Oldfield, the Pope company has a racing Toledo nearly completed. Speaking of the Winton company, Oldfield thinks Winton will surely enter for a position on the American cup race team, now that there is another chance for such entry.

The prospects of quite an invasion of European drivers following the international cup race are promising. The proposed Vanderbilt cup contest is furnishing an additional inducement for a pilgrimage of the transoceanic cracks. When the course is officially announced as secured and the entry blanks are actually out, it will be no surprise to hear of more of the foreign champions crossing the pond. Fogolin, of

the Italian team, is here already and Lancia, his team mate, is said to be coming also as a driver of the Fiat cars for Hollender & Tange-man. The latest report is that Gabriel says he will come, if the Vanderbilt race be thrown open to the world.

Charles Jarrott, in a letter to "Senator" Morgan, says he too will be over.

"I hear that you people in America think that we of Europe cannot drive a car fast on a track because we have had no experience," he writes. "For my own part I think you wrong. In my cycle experience of many years, followed by my track experience with a motor triecyle, I gained an insight into the tricks of the track, and the management of an automobile will be rather easy, I am thinking. At any rate I am willing to try to show some of your American drivers a thing or two about track work, and am confident that I shall be able to do so."

William Wallace, of Boston, whose car of his own original design made an excellent showing at Ormond for a new machine, according to a report here, is expecting a 110-horsepower racer to be completed by June.

B. M. Shanley, Jr., who has bought the Vanderbilt Mercedes, is reported to have the track racing bee buzzing in his bonnet. This means a readiness to match the straightaway mile record holder against some of the new aspirants for racing fame, which argues some exciting sport on the circuit.

Chairman Pardington, who is at work revising the racing rules, says that there will be many radical changes in them.

Senator Morgan says that a hitch has arisen in the building of the proposed race track in the White mountains through the opposition of the president of the Boston & Maine railroad which was to further the enterprise. The worthy president is opposed to encouraging the coming of automobiles to the White mountain district. Morgan says Colonel Pope and others of influence have promised to combat his arguments and point out the advantage to the railroad and the district of offering attractions to automobile tourists.

The Senator says further that C. G. Burgoyne, president of the Florida East Coast Automobile Association, has written him that the association will not apply to the A. A. A. for a sanction for record trials on the Ormond-Daytona beach, preferring that all record making attempts be deferred until the annual meet next January.

It is reported at the Banker Bros. Co.'s branch that Louis P. Mooers has entered his new Peerless American team candidate in the climb at Commonwealth avenue hill, Boston, on April 19.

The Automobile Club of America last night raised the membership limit to 500, elected thirty new members and passed resolutions approving the merger of the A. A. A. and A. M. L.

### NEW ENGLISH ROAD RECORD

M. Carlisle and D. Whitehead recently broke the record which J. W. Stocks made in 1902, when he drove a 9-horsepower de Dion-Bouton car over the classical John-o-Groat's to Land's End road, from one end of England to the other. The new record was made in 52 hours 35 minutes, breaking Stock's record by nearly 10 hours. The actual running time was 45 hours 3 minutes, which is 3 hours and 10 minutes less than the previous mark. A 10-horsepower Argyll car was used.

## OLDFIELD QUILTS WINTON

### Latter To Have None but Amateur Drivers—Former May Drive the Peerless Cup Racer

Cleveland, O., April 12—Barney Oldfield has been released by the Winton Motor Carriage Co. For some time past there have been reports that Alexander Winton was not exactly suited with having his name and cars linked with professional racing, and it is claimed that of late Mr. Winton has been importuned by many of his friends and patrons to lend his support to the amateur rather than the professional side. The recent suspension of Oldfield by the American Automobile Association for competing in unsanctioned events threw the famous driver out of the running, so to speak, and on his return to Cleveland from Florida last week he and Mr. Winton had a heart to heart talk, with the result that Barney handed in his resignation. It is stated that the matter was settled on a basis satisfactory to both parties and that Barney received full pay up to the first of August, when his contract with the Winton company expired. Evidently this story is true, because at latest accounts Oldfield was sporting a roll of large denominations.

An official of the Winton company states that the company will continue to have an active interest in the racing game but that its cars will be driven by amateurs. It is probable that the larger Bullet will be used on the circuit this summer by Henry Owesney, a former Cleveland who now represents the Winton company in Washington and who has had considerable experience in racing. The other car will be operated by some one else. Mr. Owesney will probably go for straightaway records at Daytona, but it will not be until later in the season, as it is not intended that the racing game shall interfere with Mr. Owesney's business of selling Winton cars.

Immediately after his release by the Winton company, Barney Oldfield entered into negotiations with L. H. Kittredge and L. P. Mooers of the Peerless Motor Car Co. for the position of driver of the car which Mr. Mooers is building for the Gordon Bennett cup race. Oldfield has long had a hankering to be one of the American team in the great contest this year and the failure of the Winton company to enter a car in this contest was a jar to Barney's bump of conceit, despite his assertions to the contrary. With the suspension of the American Automobile Association the Peerless company could not very well close a deal with Oldfield, so the matter is still open and Barney will take an early train for New York and offer an apology for taking part in the two unsanctioned meets at Macon and Savannah. If reinstated Barney will promise to be good and give the A. A. A. officials no cause for complaint in the future. As a secondary consideration to the Peerless connection, Oldfield is understood to be negotiating with Peter Cooper Hewitt, the New York inventor who is building a high powered racer.

An official of the Peerless company stated today that all reports to the contrary notwithstanding no driver had yet been selected to drive the Gordon Bennett car. Eastern papers have been naming a prominent eastern driver as the operator of the latest Peerless racer but it is stated positively that there is no truth in the story. He gave no definite assurance of Oldfield being engaged.

## CADILLAC PLANT BURNS

### Practically Whole Affair in Ruins— Only Few Cars Saved—Work of Rebuilding Begun

Detroit, Mich., April 13—The worst fire in automobile history occurred at 8 o'clock this morning, when the immense new plant of the Cadillac Automobile Co. was totally destroyed. A quarter of a million dollars is the property loss, but the loss from business will run much higher.

Six hundred men were employed and hundreds of these were forced to jump from second and third-story windows. Four men were seriously injured and one woman, an upholsterer, was thrown from a third-story window by her companions. Men tried to catch her, but only succeeded in breaking her fall and she was injured.

A portable gasoline riveting machine started the conflagration and so quickly did it spread that the man who ran the machine could not save his street clothing. An explosion of gasoline in the little forge caused a flame to shoot up several feet. This instantly communicated to the second floor and then to the third. Hundreds of men were at work here. In an instant everything was in a blaze and the men had hardly time to throw themselves from the windows.

Next door to the factory is an engine house, and this caught on fire. Twenty minutes after the engine companies arrived, all alarms had been turned in. They were unable to get water above the first story.

On the two floors above were hundreds of automobiles, completed or almost so. These went like tinder, while the men stood around helpless to save the results of months of their labor. The company had a well-equipped fire department of its own, but these men were driven from the hose lines in many instances.

Ten minutes after the fire started the entire building was in flames. Then the men in the office had to jump from the windows, for in a minute from the time of the explosion the flames had reached them. Many valuable papers were burned. Meantime the city's fire departments had been arriving, but the men stood around practically helpless. Three alarms had been turned in and twenty engines were on the scene, but nothing could be saved from the factories, for before the firemen arrived they were roaring furnaces.

Great clouds of smoke arose and thousands of people were attracted to the scene. These were kept a block away by fear of an explosion of gasoline. A rumor was circulated that 1,500 gallons were stored in the building. Even the firemen were anxious until it was found that the gasoline was stored in an immense tank 15 feet below the surface. Their work was hampered by floods of varnish, however. Time and again the firemen, as they stood in the area between the buildings, were scorched.

The center wing, the south wing, and the new building, which was completed only about 6 weeks ago, all went. Everything but one end of the original building fell inside of an hour from the time the fire started. So fierce was the heat of the flames that the firemen had hard work to save the engine house which adjoined the works. Time after time it caught fire. Frequent little explosions of

heat or gasoline kept the people at a respectable distance.

The company's loss is enormous. The building and equipment were valued at \$200,000, but were covered by \$300,000 insurance. The loss will be big, as the company's whole business is badly damaged. Three hundred and fifty cars are all that are on hand to fill orders for more than 5,000. These were stored in another warehouse. Here also were about a thousand motors completed. The bodies were made in another factory and can be turned out without much delay. It is the small parts which were made in the foundry factory that will cause the most embarrassment, as it will be difficult to complete machines without them.

Since April 1 cars had been going out of the factory at the rate of twenty-five per day. Some of these, however, were stored on the floors above and are a total loss. Nothing better illustrative of the wonderful push of the company can be told than the fact that though this dispatch is written while the fire is still at its height, already preparations have been begun to renew work. General Sales Manager Metzger, President C. A. Black, A. E. White, the vice president; Lem W. Bowen, secretary, and W. H. Murphy, treasurer, were all on the scene early and when they saw that very little if anything could be saved they at once held a meeting and began laying plans for the renewal of work on orders. New machinery, new tools, everything, in fact, that could be needed to rush the work, were ordered within 2 hours after the fire started and buildings in various parts of the city will be leased at once, so that work can begin.

"We are embarrassed, of course, by the fire, because it means a delay on our orders, but we will be able to fill them with comparatively little delay," said General Sales Manager Metzger. "We got off a lot of machines the other day, fortunately. Even the new addition—ones on which workmen are still busy—went with the rest of the buildings."

The employees of the company were set at work in the afternoon clearing away the debris and preparing for the erection of new buildings, which is to begin at once. It was found, after the ruins had cooled some, that the machine shop will be in condition to be started at once. The heavier machinery and much of the building where this was located was not so badly damaged as the rest. The walls and some of the floors are all right and this will be gotten ready for instant use. Men will work night and day. The loss is \$60,000 on buildings and \$140,000 on stock. After the officers got at the books this afternoon they said their greatest loss will be in not being able to fill immediate orders. They have orders for \$3,500,000 worth of automobiles on their books.

### DISCUSS N. A. A. M. PROJECTS

New York, April 17—There will be two important meetings of N. A. A. M. committees held on Friday of this week. The N. A. A. M. show committee and a special committee of the Accessories and Part Makers' Association headed by President Post will confer as to better representation for the latter at future shows.

The committee on constitution and by-laws under the new incorporation will also meet. There will be no meeting, though, of the association at large to consider them until sometime later, probably in June.

## MILWAUKEE HAS FEVER

### Dealers Estimate that the Season Will End with 500 Motorists and Double that in 1905

Milwaukee, Wis., April 10—Five hundred people in Milwaukee will own automobiles before the close of the present season, according to local dealers. At present it is estimated that there are in the neighborhood of 250 machines owned by Milwaukeeans. Local dealers predict that in two years there will be more than 1,000 machines in this city.

There is every reason for a resident of Milwaukee to become an automobile enthusiast. The city is noted for its excellent streets, its main thoroughfares being well paved, mostly with asphalt, while all the others are kept in the best possible condition. On all sides of the city there are fine drives and large parks. Should the motorist seek to test the merits of his machine further, the country surrounding is a network of the best roads in the west and in every direction there are resorts and pleasure places. To the north is Whitefish Bay, a noted pleasure resort which forms an excellent point of destination for a short spin. A little further in the same direction is Fox Point, where a number of the wealthier people of Milwaukee have their summer homes. Here there are excellent golf links, and during the summer dozens of parties make this the destination of a short trip, spending the day at golf. Many of those that have their summer homes at this place own machines.

To the west there are innumerable resorts. Oconomowoc, one of the best known places of summer homes in Wisconsin, is frequently the destination of the motorist. This little city is surrounded with small lakes that offer their shores for ideal picnic grounds and their waters for excellent fishing and boating. Waukesha, known as the Bethesda of the middle west, lies just beyond the county limits and is frequently visited. Muskego lake is another pleasure resort frequently visited and in the summer time there is a constant stream of automobiles to Pewaukee, where one of the prettiest lakes in the state is completely surrounded by handsome summer homes of wealthy Milwaukeeans. The golf links of Kenosha and Racine, together with their other attractions, frequently send the motorists upon a short southern trip.

The enthusiasm of the automobilist in Milwaukee knows no bounds. Despite accidents sometimes brought about by recklessness, they continue to be ardent lovers of the sport. The accidents are never productive of disastrous results and the owners of the machines claim they but add zest to the amusement. But one person has been killed by an automobile since the sport was first introduced in Milwaukee and in that one instance the incident was unavoidable.

Automobilists have succeeded in securing a modification of the rules confining the operation of the machines, doing away with a senseless ordinance limiting the use of warning appliances to gongs, and succeeding in having other requirements modified until they have reached a consistent point. There are no restrictions other than are absolutely necessary for the sake of safety and in all things motorists are allowed full liberty.

The Milwaukee Motor Club is progressing



finely and is now laying plans for a club house, either to be erected by the club or to be leased in a convenient locality. Active work has been commenced toward increasing the membership and it is expected that in a few weeks more the organization will be sufficiently advanced to carry out its plans.

A number of automobile dealers, and many prominent business men of this city, are planning trips to the world's fair at St. Louis this summer. It is expected that about a dozen machines will leave from here, including Peerless, Winton and others.

The Jonas Automobile Co. has sold to A. Bach of the Abél Bach Mfg. Co. a 20-horsepower Peerless machine valued at \$4,000. Mr. Jonas has sold a dozen Peerless machines so far this season. The firm received a carload consignment of Autocars.

The C. G. Norton Automobile Co. has a new building in course of construction on Broadway, near Biddle, to be occupied upon its completion as a storage, livery and repair place. The building will cost in the neighborhood of \$13,000. It will be 60 by 120 feet in dimensions and will be of unique style, resembling the old "wayside inn," being one story in height and having a sloping tile roof. The company expects to occupy the building about May 1.

The Knox Automobile Co., located on Wisconsin street near Van Buren, is having its show rooms enlarged by the addition of a one-story brick structure with dimensions of 68 by 80 feet, located to the rear of the present show room. The company now has an exhibit space of 4,800 square feet.

Orlando Weber, the local representative of the Toledo, has returned from a trip through the east, where he visited several of the big manufacturing plants. Mr. Weber is enthusiastic over the prospects of the automobile outlook for this year.

The Bates-Odenbrett Automobile Co. has a building under course of construction just north of that now in use at 501 Broadway. The basement will have a cement floor the full length and width of the building and will contain machinery for the repair of automobiles. The main floor will contain the show room, office and waiting rooms, and altering room. The finish of the building will be in yellow pine. There will be an entrance for automobiles on Broadway, with a passage 12 feet wide, extending half the length of the building. The doors in the front and rear of this passage will open by electricity.

#### DEALERS ELECT OFFICERS

Chicago, April 12—The Chicago Automobile Trade Association held its second meeting on Monday evening and took another step in organization. Twenty-one concerns were represented. Officers were elected as follows: President, Charles H. Tucker, of the Winton branch; vice-president, Walter Githens, Oldsmobile Company; secretary, F. J. Pardee, Pardee & Co.; treasurer, B. G. Sykes, Locomobile branch. An executive committee was also named, and consists of the officers and A. C. Banker, J. Ollier and A. G. Bennett.

The next thing on the program of the association will be incorporation under the state law, after which will come an effort to secure better conditions for the trade in general, and especially as regards the license and numbering regulations.

## CHAUFFEURS ORGANIZE

### Frisco Drivers Form an Association with Good Objects in View—Trade Conditions Good

San Francisco, Cal., April 5—The chauffeurs of San Francisco assembled recently and organized themselves in an association to be known as the California Association of Chauffeurs, Inc. Every garage in the city was well represented, and the meeting adjourned with an enrollment of forty-six charter members. At a later meeting the following officers were elected: President, S. Hewson; vice-president, A. R. Newcomb; secretary, F. J. Swentzel; treasurer, S. P. Jarvis; conductor, J. Lucky; sergeant at arms, C. H. Anderson. The object of the new organization is to bring chauffeurs more closely together, to be able to render each other better assistance, to become better operators and mechanics, to protect themselves, automobile owners and dealers from the rampant, reckless drivers of whom there are so many in this city and who are a detriment to everybody and really of no use to themselves.

The trade is now on the boom and the season promises to be a banner one. The White Sewing Machine Co. reports many sales, while the Pioneer company has its hands full in disposing of Winton, Stevens-Duryea and Oldsmobile machines. No new models of the latter car have been received, but are due any day. Several car loads of Wintons arrived yesterday and have been delivered. Eight Stevens-Duryeas reached Frisco yesterday and six were immediately disposed of.

The Rambler Automobile agency, handling only the Rambler cars, received two car loads a week ago, and yet cannot get them fast enough. Cuyler Lee, the agent for the Cadillac, is also out of cars and the West Coast Motor Car Co., which handles the Autocar, is also taking many orders.

While the dealers seem to have their hands full in booking orders, the renting business has become profitable of late. At present there is but one company which rents automobiles exclusively. The Automobile Transit Co. is its name. It has about twenty rigs for the purpose. The Scott & Blaesslee Co., of the Pioneer Renting Agency, has just added two large Winton touring cars to its staff, making seven in all.

Lyle Renney has been appointed manager of the Rambler Renting Agency, a new company organized last week for the purpose of placing a number of Rambler touring cars in service. C. O. Widholm is the latest to engage in the renting business in San Francisco, with a White touring car. Others engaged in renting White cars are: Ed Calef, Bert Dingley, W. F. Brong, W. S. Arnold and George Corey. Demonstration machines are also rented by the White Sewing Machine Co., while a number of French rigs are being rented by the Mobile Carriage Co.

#### STEAL BUFFALO CARS

Buffalo, N. Y., April 11—Last fall automobilists were considerably annoyed on account of laprobes, lamps, horns, etc., being stolen from their cars, and there were also isolated cases where boys had run off with cars and left them in out of the way places. Since that time owners have taken the connecting plug with them when they left the car, and it was thought there would be no more trouble with mischievous youngsters running away with machines. The Buffalo boy is a precocious youth, and not-

withstanding the fact that E. L. Koons took the connecting plug out of his car when he made a call on Ashland avenue last Saturday evening, two boys who evidently have looked into automobile construction somewhat, made a connecting plug with a piece of tin and for several hours had fun running the car around, while Mr. Koons and the police were making diligent search. When the boys had all the sport they wanted they left the rig and early Sunday morning it was returned to the owner.

The executive committee of the Buffalo Automobile Trade Association held an important meeting at the Iroquois hotel Thursday evening. The success of this association has been the fact that no resolution has been adopted unless it has been unanimous, and something that will doubtless appeal to organizations of a similar nature occurred at this meeting. An application for membership has been made by a concern of retailers which has an office but no store. It was the sense of the meeting that this agency came under the head of a curbstome agent and for this reason the application was refused. There were a lot of curbstome agents in the early bicycle days, but it is something that was not looked for in the automobile business so long as the demand was greater than the supply.

The affairs of the defunct Morlock Automobile Co. were wound up last week. Two of the old stockholders paid sufficient money for the stock on hand to enable the trustee to pay the creditors 50 cents on the dollar, and as this was acceptable, the creditors were paid off and thus ends the last chapter of the Morlock Automobile Co.

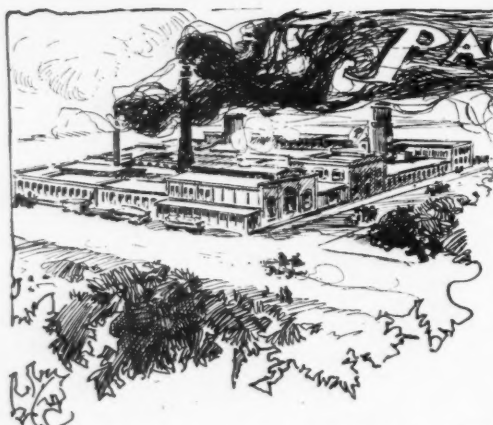
The dealers who are handling cars of repute all claim to be doing a very satisfactory business, but very few deliveries are being made. The trading of second hand cars is becoming a very serious question, and while the old dealers are doing little or no trading, new comers in the field are allowing fabulous prices for second-hand cars and also doing quite a lot of price-cutting. While this is causing some annoyance to the old houses, it is the consensus of opinion that this condition will not be of long duration, and while there are twenty-seven dealers at the present time, next season will doubtless find the retail field considerably less congested.

Two or three dealers are working the delivery wagon proposition, but there is very little business being done on account of the wagons not having enough capacity. There is a good field here for a big delivery wagon, but up to date no manufacturer seems to have filled the want.

#### AFTER CYCLE PATHS

Minneapolis, Minn., April 11—Motorists of this vicinity stand a show to have the use of the excellent system of cycle paths for which the twin cities are noted. Recently the cycle path commissioners have become discouraged over the agitation on the part of cyclists against an increase of price of cycle path yearly tags from 50 cents to \$1, the former price not yielding sufficient revenue to maintain the paths properly. The path commissioners are somewhat of a mind to throw up the job and let the paths become public property.

The owners of automobiles are awaiting just such an opportunity. A committee from the motorists recently called upon J. W. Taylor, president of the Cycle Path Association, and offered to take the path system off the hands of the commission, guaranteeing that every automobilist would pay \$25 a year for the maintenance and improvement of the paths.



## PACKARD CARS MADE AND BEING MADE

**W**HEN a man buys a Packard car he gets a machine that was made by workmen who toil in pleasant surroundings, for if there is one thing more than another which characterizes the new factory at Detroit, Mich., of the Packard Motor Car Co., it is the bright, cleanly and cheerful aspect of the different departments.

The establishment is laid out as a hollow square with windows on all eight sides, and should, by expansion, the buildings be raised, story after story, the lighting qualities would not be much impaired. Just now the whole factory is delightfully new and clean, but it is so arranged and its work so carried on that even years of work could not throw a great gloom over it. It is one of the new style of factories that are gradually displacing the old prison work shops which, especially in cities, and sadly enough, were common in all industries until the last decade. It is most fitting that the automobile industry as the newest great industry of the country should in its new factories add to the strength of the movement toward rational working places.

The Packard square has its gateway at the southwest corner, the two-story office being at the right of the entrance. At the left of the entrance is the power house. Extending each way from these two extremities of the establishment are the different manufacturing departments, so arranged relative to each other that the processes of producing a complete automobile are progressive around the square, terminating in one of the two long, single-story buildings which lie in the middle of the inner yard.

The power house group, which forms the west side of the square, is flanked on both sides by railway tracks, the inner being a siding which runs along a covered platform. Hence this side becomes at once the receiving and shipping point, everything from coal wherewith to feed the boilers to light hardware for trimming the bodies, being brought to this portion of the factory, and the finished cars being here loaded onto outgoing cars.

The power house, of course, includes the boiler room. Back of this is the general stock room, then the blacksmith shop, and, at the extreme north of the west building, is the plating and polishing room. Here the corner of the square is open to allow the passage into it of the side track, and right in the corner is an underground reservoir for gasoline, which may be taken directly from tank cars.

On the south side of the square the first department eastward from the office is the lathe room; on the corner is the milling machine and drill press room, and north of this, in the east building, are successively the tool store room, the parts inspection room, and the finished parts stock room. The north room of

this building is the assembling room for motors and transmission gears. As this east building is of two stories, the upper floor, enumerating from the south end, is devoted to drafting room, private designing room of the mechanical engineer, experimental room, tool making room, pattern shop, tin and sheet metal shop, and wood working department. Getting down to the ground level again, the north building starts with the running gear frame building and running gear assembling room, which naturally joins the motor assembling room. Next to it on the west is the motor testing room, while this building ends at the railway switch opening with a repair shop.

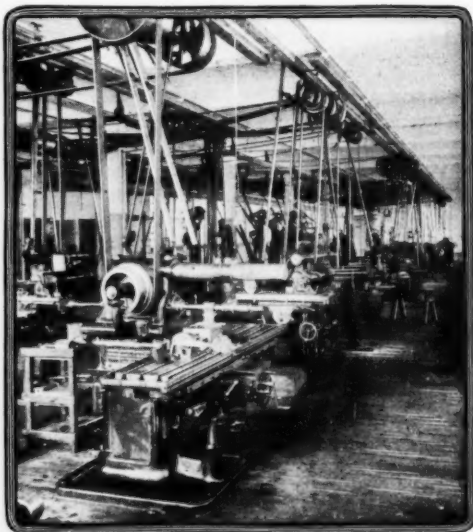
The eastern of the two inner detached buildings comprises the painting and varnishing rooms and the upholstering department. It is connected by a covered walk with the other

serve to support water tanks, and as heating plants. Under the finishing building is an immense water reservoir. So much for the general lay-out of the factory.

The power plant is arranged to be easily increased without alteration, both in the matter of boiler and of engine. There are in the boiler room two 200-horsepower McNaul boilers, equipped with Detroit automatic stokers. They are placed at the east side of the room so that another pair may be, at any time desired, placed in line with them. The fuel room holds 200 tons of coal.

The engine room, like the boiler room, is much larger than actually required for the present power plant, and the engine and electric generator are placed so that another unit may be added, without change in the present arrangement. The engine is a 280-horsepower, tandem compound Ball engine, to which is directly connected a 150-kilowatt Western Electric Co. generator that supplies the current for lighting and for the various electric motors that individually drive the machinery of the respective departments. Thus there are motors in the lathe room, milling machine and drill press room, motor assembling room, chassis assembling room, plating and polishing room, blacksmith shop, rough stock room and finishing room. The machinery in the experimental, tool making, pattern, tin and wood working rooms, on the second floor of the east building, is driven by belts from the line shafts in the ground floor departments underneath.

The entire establishment is heated by a hot air system. In each of the two towers in the eastern corners of the square there are small steam engines which take steam from the main boilers, and which drive fans that circulate air through large overhead flues to each room. This air is taken from out-doors and heated by being drawn around steam pipes. On top of the towers are 1,000-gallon water tanks which are always kept full to maintain pressure for the automatic fire sprinklers with which the different departments are equipped. This fire protection is, of course, backed by the large reservoir under the finishing building, and by the usual fire pump that may be used to provide direct fire pressure in case of an extensive flame. In the northern of the two towers the

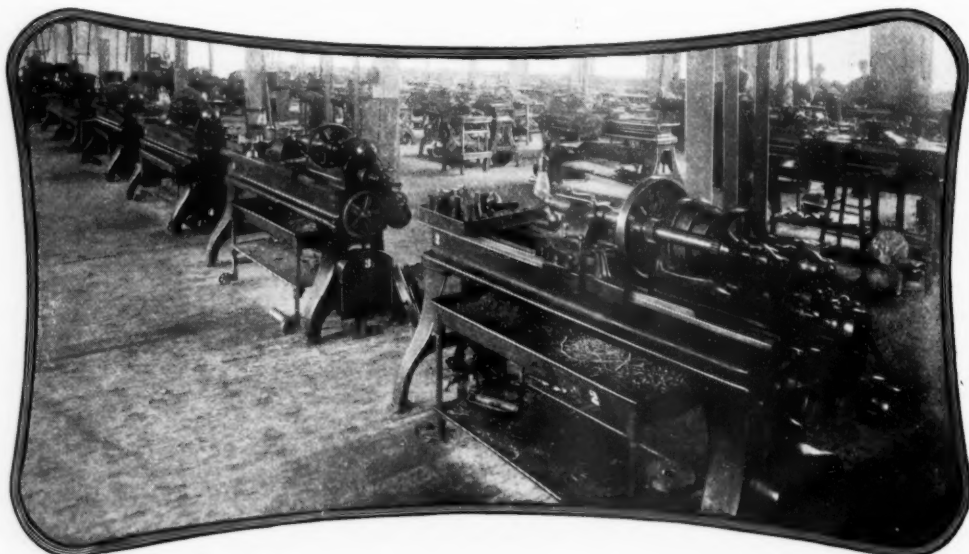


MOTOR AGE

MILLING MACHINE ROOM

inner building which is exclusively devoted to the final assembling or finishing, of the cars. From it the vehicles can be taken directly to the railway cars on the side track between it and the west building.

On the south and north sides there are general wash rooms, while several of the departments have also especial wash rooms. In each of the two eastern corners are towers which



MOTOR AGE

THE LATHE ROOM



heating system is supplemented by a steam wood bending plant in conjunction with the wood working department. There is also an elevator in this tower.

The general wash rooms are hygienically, as well as conveniently arranged. They contain metal cages with locks which form individual lockers for the workmen, and long porcelain wash basins supplied with running water. One of these wash rooms is illustrated.

The manufacture of cars really begins in the southeast corner, on the second floor, where the mechanical engineer's private designing room, his experimental room, and the drafting room are grouped. The processes herein are more interesting to participate in than to witness or describe. Suffice it that the departments are conducted on a modern, systematic basis, even to the numbering and filing of tracings and blue prints. One of the most interesting features, were its various products made public property, would be the huge blackboard in the

unassembled members of the pressed steel frames; and the unassembled wood parts of the artillery wheels. Finished stock includes radiators; imported induction coils; roller bearings for the front wheels, steel balls for the various ball bearings; springs for the vehicle; seat cushion springs; spark plugs and storage batteries; some of the gears used; tires; small hardware, such as used in body trimming; and rivets, bolts, nuts, etc.

Necessarily the idea department, the tool room, the pattern room and the purchasing department, are closely related to all phases of the factory, for much of the operations of one depends upon those of another or the others.

The blacksmith shop, the lathe room and the milling machine and drill press room are logically the first distributing points of both raw and semi-finished stock. As hinted above, the blacksmith shop handles about a third of the drop forging, and this branch of the work is considerable, on account of the fact that all

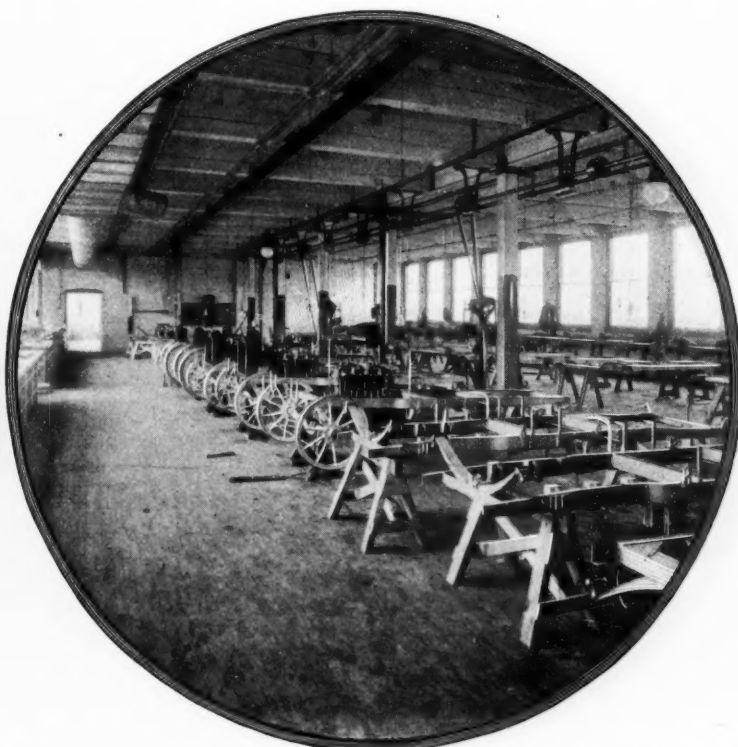
as semi-finished stock brought to final shape.

The finishing of parts includes much grinding; in fact it seems as if the amount of grinding in the Packard factory is exceptional. Most of this work is done on Brown & Sharpe universal grinders, and it includes the grinding of the following parts: The main drive shaft in the transmission gear; the driving clutch shaft; the motor cam shaft; the motor piston; the piston rings; the connecting rod wrist pins; the valves, valve stems and valve seats; the pins and rollers of the propeller shaft universal joints; the commutator box, roller and shaft; the steering gear worm shaft; the steering knuckle bolt, bushings and washers; and the cups and cones for the ball bearings in the rear axle and transmission gear and on the clutch shaft, and the seats for the roller bearings in the front wheel, fifteen bearings altogether, several of them double.

The cylinders are lapped with ground glass and oil, with the pistons which are to be finally



THE MOTOR AND TRANSMISSION ASSEMBLING ROOM



THE CHASSIS ASSEMBLING ROOM

designer's room, on which automobiles grow, life size, in chalk before they are made in any other way.

When the ideas that constitute the model of car to be produced, have left the blue printing frame their ways part. Some go to the pattern shop, some to the tool making room and some to the purchasing department. Through the last named there is brought into the factory, stock that may be divided into three classes—raw, semi-finished and finished. The first predominates in quantity if not in variety. It includes bar stock for all turned work, raw stock for forgings; sheet aluminum, brass and iron; wood for body frame work, etc.; leather and hair for the upholstery.

The semi-finished stock would include copper piping, steel tubing and rubber hose; cylinder and piston castings, which are imported from Paris to get the advantage of French skill in this art; brass, aluminum, and iron castings for other parts; about two-thirds of the drop forgings used, these being made from the company's own dies the same as though forged in the home blacksmith shop where the minor portion of the forgings used are produced; the

of the parts of the mechanism in which strength is an object are drop forgings. Here also, tubing and piping is bent and trimmed and brazing and case-hardening accomplished. In the latter branch the company lays claim to a carefully studied process whereby gears may be case-hardened so that the middle un-carbonized portion will be exceedingly firm and tough, thus rendering the gears proof against the snapping of teeth under the constant hammering of such work as automobile power transmission.

The lathe and the milling machine and drill press room constitute the regular machine shop, being so divided in order to systematize the work. Each room, of course, includes all of the various modern machine tools of its class and the milling machine department also has a few odd tools such as planers, etc., which are not sufficiently numerous to warrant a separate department; while the drill room has a large cylinder finishing machine upon which cylinders are bored and finished without removal from their jigs. Practically all of the parts of the car's mechanism pass through these rooms, either as raw stock converted into parts, or

fitted to them. It is said that this ground glass lapping gives much more satisfactory results than lapping with emery or carborundum, and that after the glass has been used for a while it becomes reduced to a paste which no longer has grinding properties, and that hence should, in the washing out of the cylinder and piston after lapping, a minute amount of it remain, it would not have the cutting effect of emery left in cylinders after lapping with it.

As the performance of the machine work is all by gauge and templet, it necessitates a host of such guides to accuracy, as well as a large number of jigs, special tools for peculiar machine operations and special appliances for handling the work. Hence the tool making room, on the floor above, is a large department and kept pretty busy. The stock room for these tools adjoins the milling machine room on the north and is carefully and systematically kept to avoid abuse of the tools and their loss or injury through disorderly handling.

Parts finished in the machine tool rooms are sent directly north past the tool stock room to an inspecting department, where all pieces are carefully inspected and gauged. They are



MOTOR AGE

THE TOOL MAKING ROOM

then eligible for a brief rest in the finished parts stock room. From here they go directly to the motor and transmission gear assembling room, where the motors are put up, and the rear axle sets are made ready for attachment to the running gears.

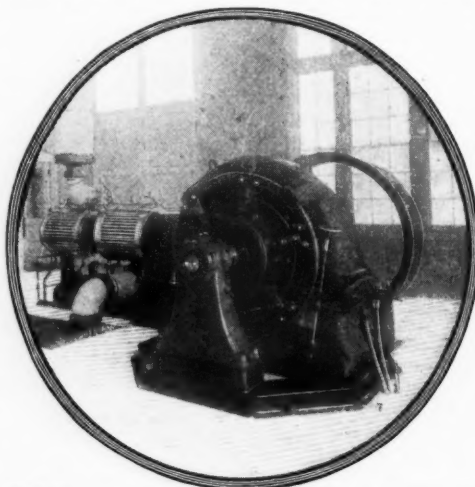
Both motors and gears are assembled on stands, which are arranged in long rows on the side of the room, so that each workman has a bench space back of his assembling stand. The care used in putting these operating parts together is well exemplified by the weighing of assembled pistons and connecting rods, that all may be of exactly the same weight to afford a true balance in the four-cylinder motor. If a piston and rod set is over weight a little metal is taken off and it is not put into a motor until it is of the correct weight.

The motors, after being assembled and ready to run, are taken to the motor testing room on the west side of the chassis assembling room. Here they are given a double test, one under a prony brake load and one under an electric generator load. The motor is first tested on the dynamo and readings are taken for power developed at 700, 750, 800, 850, and 900 revolutions per minute. A similar test is made on the prony brake and here the motor is not supposed to be passable unless it develops 22 horsepower at 800 revolutions, it being rated at 22 horsepower at 900 revolutions. The average length of the testing of a motor is 15 hours, each being started in its test running on a load of 5 or 6 horsepower, and this load gradually increased until the maximum is reached.

From the testing room the motor goes back to the chassis assembling room, wherein the chassis main frames of pressed steel have been assembled and hand riveted, and the axles,

transmission gears, small parts, etc., attached. The frame assembling is done along the north side of the room, and when a frame is finished it is shifted directly across the room to trestles on the south side, where the attachment of the parts commences.

The assembled chassis, when it leaves this room, is ready for a road test on a pair of testing wheels. It then goes to the paint shop,



MOTOR AGE

ENGINE AND GENERATOR

where it is given the usual dose of a multiplicity of coats of filler, color, and varnish, nearly approaching in number of successive treatments the coating of the body; which has, in the meantime, come from the wood working establishment with its white aluminum sides to be made into a Richelieu blue affair with cream-color striping. Several of the rooms in the painting building have signs on the doors, reading, "Passes not good here." This means that the constant opening and shutting of doors

and the consequent circulation of dust cannot be tolerated, for painting an automobile is one of the fine arts, and the cleanliness of it has a great deal to do with the degree of success of it.

Before the bodies receive their final varnish coat they go to the south end of the paint shop building, wherein is the upholstering department, where the dark blue leather is tufted over the hair and springs, and the other leather trimmings are put in place.

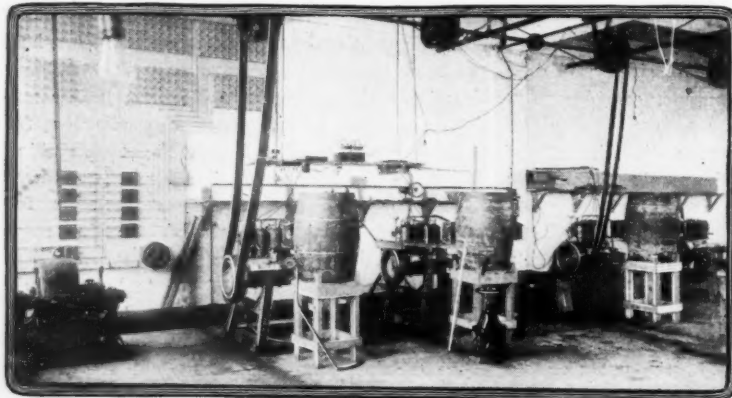
On the covered walk that connects the two inner buildings, the finished chassis and the finished bodies are taken to the finishing building, where they are put together and the things that have been made actually become cars—model L Packards—and the sales department is made happy.

The one department in the establishment which does not enter into this matter of evolution of raw material into vehicles, is the repair shop in the northwest corner of the enclosure. Just at present this room deals more in Packard history than in Packard present, for the cars of this year's vintage are too young to make its acquaintance, and the work in it is chiefly the putting into shape or remodeling of old, weather-beaten, single-cylinder cars which have been given the fifty-seven varieties of use and abuse. There is no power or machine tools in this department, as the machine work necessary in its accomplishments is done for it in the regular machine rooms of the factory.

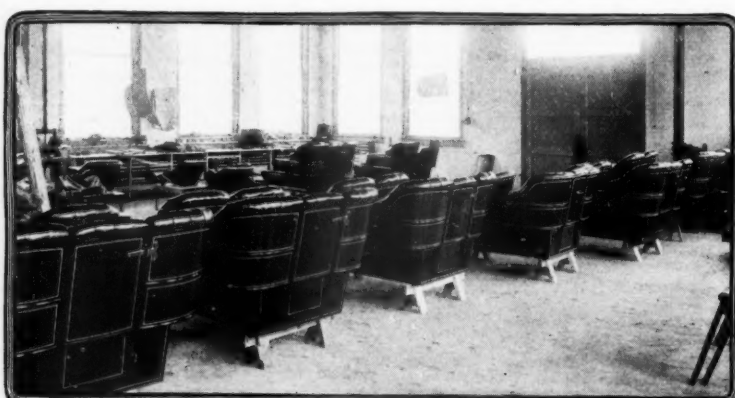
The factory is now being worked day and night with two shifts of workmen. Moving from Warren, O., to a new plant meant much work and much delay, and being accomplished at the same time that a new model was brought out which necessitated new parts from steam to stern, the task of turning out this season's goods was no small one. The hard part was to get all of the standard parts for one car. With every part, from the smallest to the largest, once started through the factory and being turned into the stock room, the task of assembling into finished machines proved a lighter one, and the company has now a good start on its year's production.

The Packard executive staff is: President, J. W. Packard; vice-president, Russel A. Alger, Jr.; secretary and treasurer, Philip H. McMillan; general manager, Henry B. Joy; mechanical engineer, Charles Schmidt; sales manager, S. D. Waldon; manager of manufacturing department, C. J. Moore; superintendent, William Gleason.

The foreman of the manufacturing departments are: Machine department, E. W. Dobson; lathe room, R. A. Shuet; milling machine room, E. A. Hammer; motor and gear assembling room, E. F. Roberts; chassis assembling room, F. A. Johnson; motor testing room, Al-



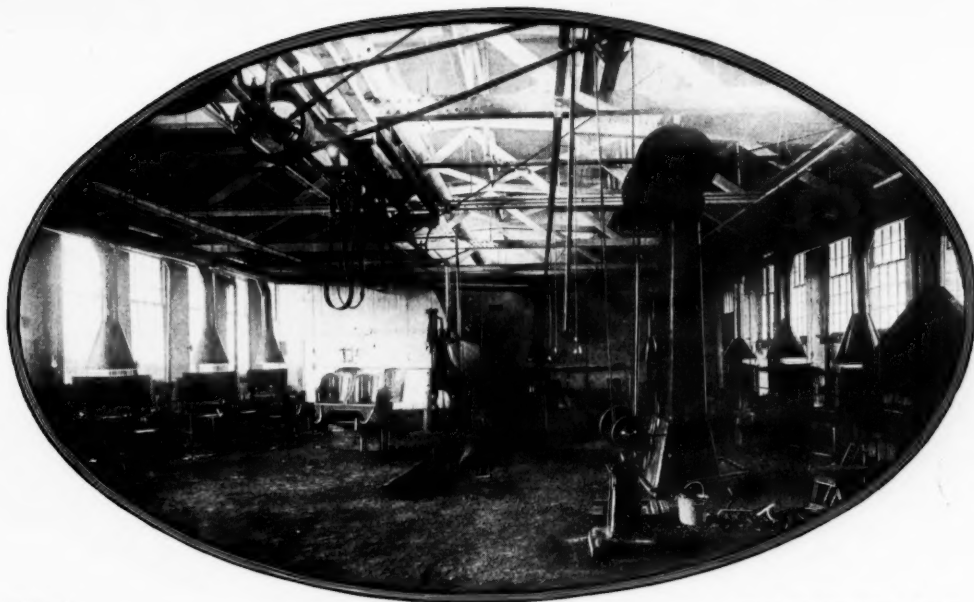
MOTOR TESTING ROOM



MOTOR AGE

UPHOLSTERING DEPARTMENT





MOTOR AGE

THE BLACKSMITH SHOP

bert Champion; plating and polishing room. G. E. Avery; blacksmith shop, Henry Pierce; stock room, R. H. Allen; drafting room, Russell Huff; tool making room, E. E. Meade; pattern room, G. B. Scott; tin and sheet metal room, W. B. Hearst; wood room, F. J. Mohan; paint shop, E. A. Carpenter; upholstering room, J. A. Craig; finishing room, W. J. Birmingham; brazing department, H. J. Chapman; inspection of parts, G. H. Lamont; inspection of cars, R. H. Fishback; assistant to Manufacturing Manager Moore, F. R. Humpage.

The Packard model L is a 1900-pound touring car of 22-horsepower. It was designed with the intention of producing a speedy, light car for general purposes of automobiling, one which would be easily handled, stand hard work and climb steep hills. Hence it has about as low weight per horsepower as any car on the market. On the other hand this result is obtained by conservative design rather than by the adoption of delicate parts. For instance, the body is a comfortable tonneau of late European style, is made of aluminum over a light wood frame and does not add the weight to the running gear that does the ordinary Roi des Belges.

The car has a wheel base of 94 inches, with standard tread; the wheels are 34 inches in diameter, of the artillery pattern, the rear wheels having twelve and the front wheels ten spokes. Four-inch detachable tires are used. The front axle is tubular, 2 inches in diameter, with the usual downward bend in the middle to clear the fly wheel. Heavy jaw-style steering knuckles, which are brazed to the axle tube are used.

The steering spindle sleeve has attached to it the stub axle, which is carried by a socket on the front side of the sleeve, so that the wheel axis is ahead of the center of the steering knuckle. The bell crank, which on the right side, serves as operating connection for the rod from the steering gear and also for the cross steering rod, and the single lever arm on the other side, are attached to the inner sides of their respective steering spindle sleeves by outside sockets similar to those which hold the stub axles. The rod between the steering gear and the bell crank is attached to the latter by a spring cushion ball and socket joint, while ordinary jaw connections are used between the steering knuckle levers and the cross connecting rod.

The front wheels run on roller bearings. The

upper inner corner of each steering knuckle jaw piece is formed into an ear, or lug, which carries the shackle for the semi-elliptic cross spring, which has been used on all Packard cars except the model K. The rear springs are the usual semi-elliptics and are 42 inches long,



MOTOR AGE

ONE OF THE WASH ROOMS

2 inches wide and of five leaves. The pump handles which support their shackles are bent outwardly to swing the springs outside the side bars of the main frame. Two adjustable distance rods extending from the front axle to the frame serve to retain the former in its

normal position, these being necessary on account of the cross spring used to give a three point suspension.

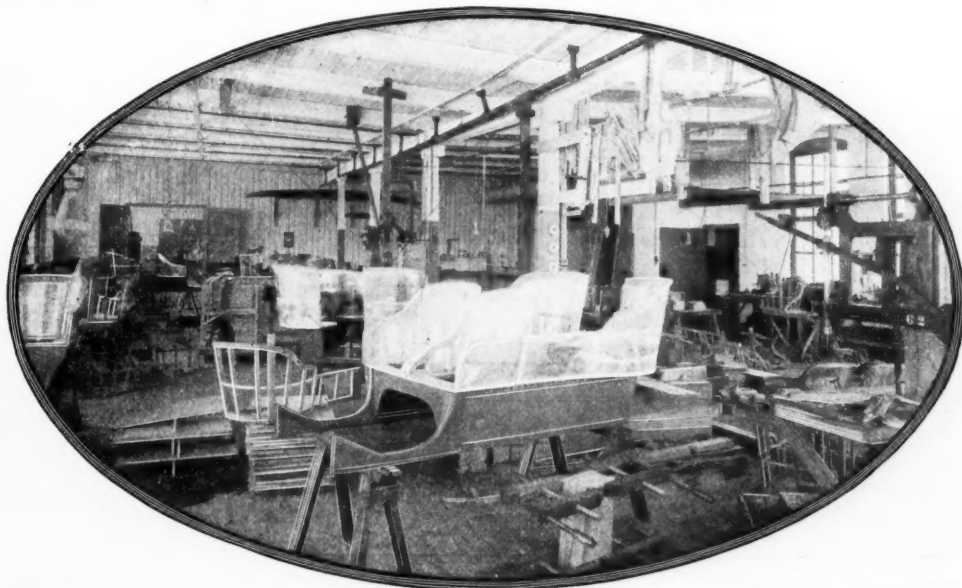
The frame is of pressed steel and comprises two side bars and four cross bars, all of which are pressed by the Federal Mfg. Co., although the parts are assembled by the Packard company. All of the bars are of channel section. The side and two end bars are of the same section and are placed with the open side inward. The two intermediate cross bars are placed with the open side of the U downward. All of the riveted corners of the frame are braced by steel plates. The side bars at their middle portion are 4 inches high and 1½ inches deep. They taper towards each end and are also curved inward to make the front end of the frame narrower than the rear.

There is no sub frame for the motor, which is supported by cast arm extensions from its crank case, these fitting into pockets of pressed steel, which are attached rigidly to the side bars of the main frame.

The motor is of the four-cylinder vertical pattern, placed in the approved longitudinal position in the front. The bore is 3¾ inches and the stroke 5¼ inches, the engine being rated at 22-horsepower at 900 revolutions. The cylinders are cast in pairs, with the heads, valve chambers and water jackets of each pair integral. Each pair of cylinders is secured to the aluminum crank case by six stud bolts, a fiber gasket being interposed.

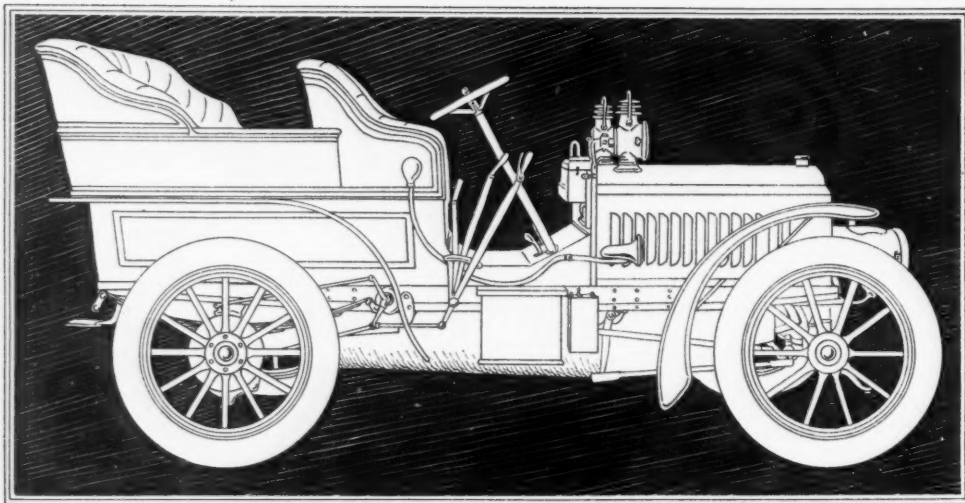
The crank case is in halves, ordinarily, but the supporting arms are cast onto the upper half instead of the lower, that the latter may be removed without disturbing the motor. To further facilitate this, the middle bearing of the crank shaft is entirely supported by the upper half of the case. In addition to the facilities for getting at the crank bearings by the removal of the lower half of the case there are two inspection doors on the side of the casing, these being especially handy in furnishing access to the cam shaft gearing.

Both the exhaust and inlet valves are mechanically operated from the same cam shaft, hence they are all in line along the left side of the motor. They are the same size and interchangeable. In the valve chamber extension of each pair of cylinder castings the inlet valves occupy the end positions, bringing the exhaust valves together so that the chambers below the valves may communicate. In this way there is only one exhaust pipe branch for each pair of cylinders.



MOTOR AGE

THE BODY MAKING DEPARTMENT



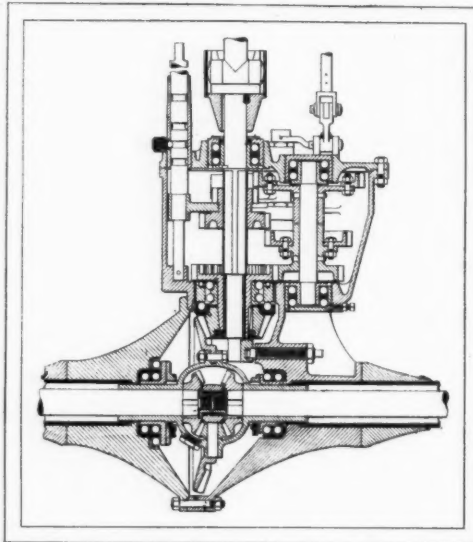
MOTOR AGE

PACKARD MODEL L.

The valves are made in one piece of nickel steel. Their diameter is 1 9-16 inches with  $\frac{3}{8}$ -inch stems. Cupped washers resting on pins through the valve stems retain the valve springs. Steel guides for the valves are screwed into the chambers, while bronze guides for the push rods are supported by the crank case, the push rods being prevented from turning in these guides by suitable pins. The rods are, of course, provided with the usual cam engaging rollers. The cam shaft is driven by helical gears and is entirely enclosed in the crank case, having three bearings. The pistons have four rings, all being at the upper end. In the middle portion the diameter of the piston is reduced, presumably to lessen the frictional surface. In the lower end are two peripheral oil grooves. The connecting rods which are drop forgings, are finished all over and have bronze bushings at both ends, the wrist pins being fixed in the pistons.

The ignition is by the usual jump spark system, the spark plugs of which screw into the caps which close the inlet valve chambers. The commutator is enclosed and comprises a cylindrical casing lined with fiber, in which four metal contact plates are equi-distantly imbedded. Extending radially from the shaft is a bracket on which is pivoted a lever arm that has a roller which presses against the inner

wall of the commutator casing, a short coil spring being used to maintain this pressure. The operation of the commutator is visible by



MOTOR AGE

PACKARD TRANSMISSION

means of a mica cover. It is driven by a pair of bevel pinions from the cam shaft, being placed on a vertical shaft at the rear end of the motor.

The regulation of the spark is by a lever, or

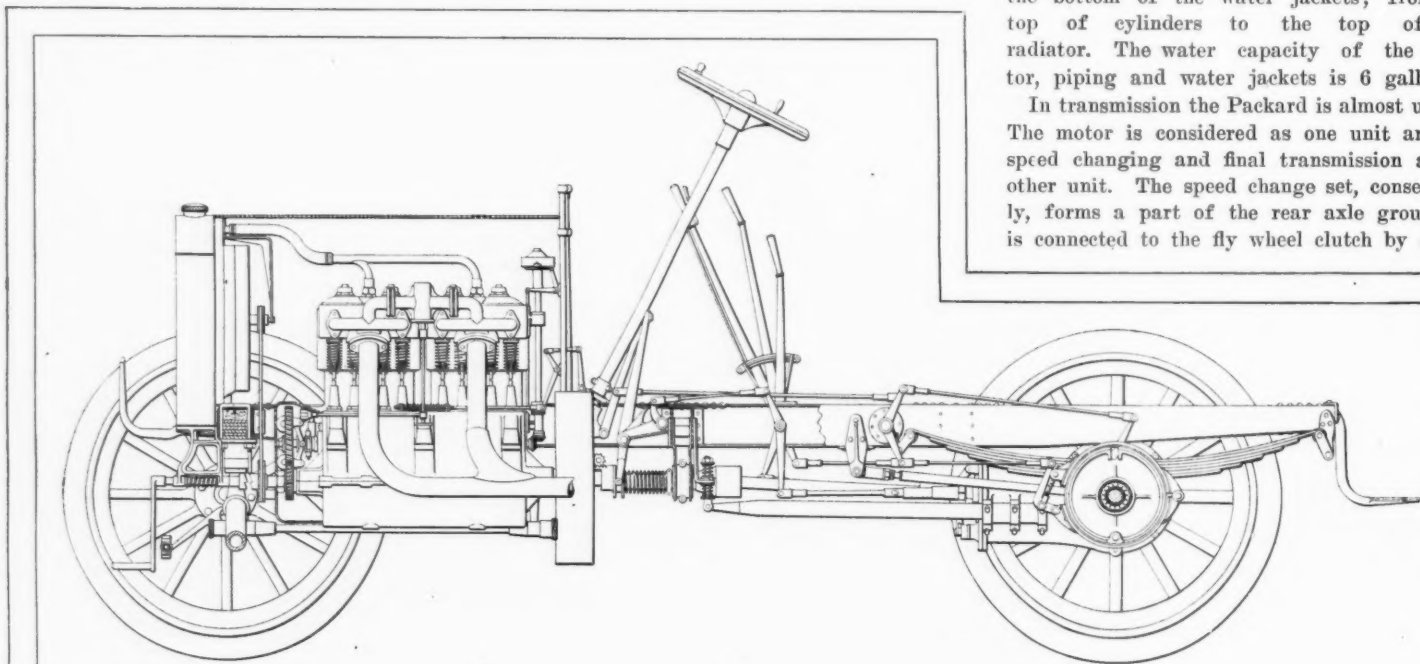
more properly a crank, on top of the steering wheel, which operates a gear and worm on the steering wheel post head to raise or lower a rod passing downward through the wheel post to suitable bell crank and rod connections with the commutator. The current for the ignition is supplied by storage battery cells carried in a box on the right step of the car and is utilized through a quadruple vibrator on the dash board.

The carburetor is of the ordinary float feed style with a spun copper float to regulate the needle valve. The chief peculiarity of the mixing chamber is the provision of a number of fine spray openings in an inverted cone, which in turn is within a conical spray seat. The air inlet is provided with a pipe which leads to the exhaust pipe, that warm air may be drawn into the mixing chamber. The carburetor being in the right side of the motor and all of the valves on the left side, a copper pipe extends from the carburetor upward and across the motor to the inlet pipe system, which is properly branched to afford an equi-distant "draw" for each cylinder. In the end of this cross pipe is a chamber, whose throttle is thus operative upon all cylinders. The centrifugal governor on the front end of the motor cam shaft controls this throttle. The governor in turn is controlled by a lever on the steering wheel through the medium of a threaded block and a corresponding sleeve, whose upward and downward movement is transmitted eventually to other sliding sleeves on the outside of the steering post and thence to the throttle by suitable links and levers.

The lubrication of the motor is by means of a sight feed oiler on the dash, which includes a 2-quart reservoir, and the feed is forced by a single plunger pump supported by the motor and driven by a worm gear set and eccentric from the vertical commutator shaft. The motor is, of course, cooled by the usual water system, the circulation of which is effected by a gear pump on the front end of the motor crank case and driven by a helical gear from the cam shaft.

Whitlock cellular radiator is used. It is provided with a belt-driven suction fan. The direction of the water circulation is from the bottom of the radiator to the pump; thence to the bottom of the water jackets; from the top of cylinders to the top of the radiator. The water capacity of the radiator, piping and water jackets is 6 gallons.

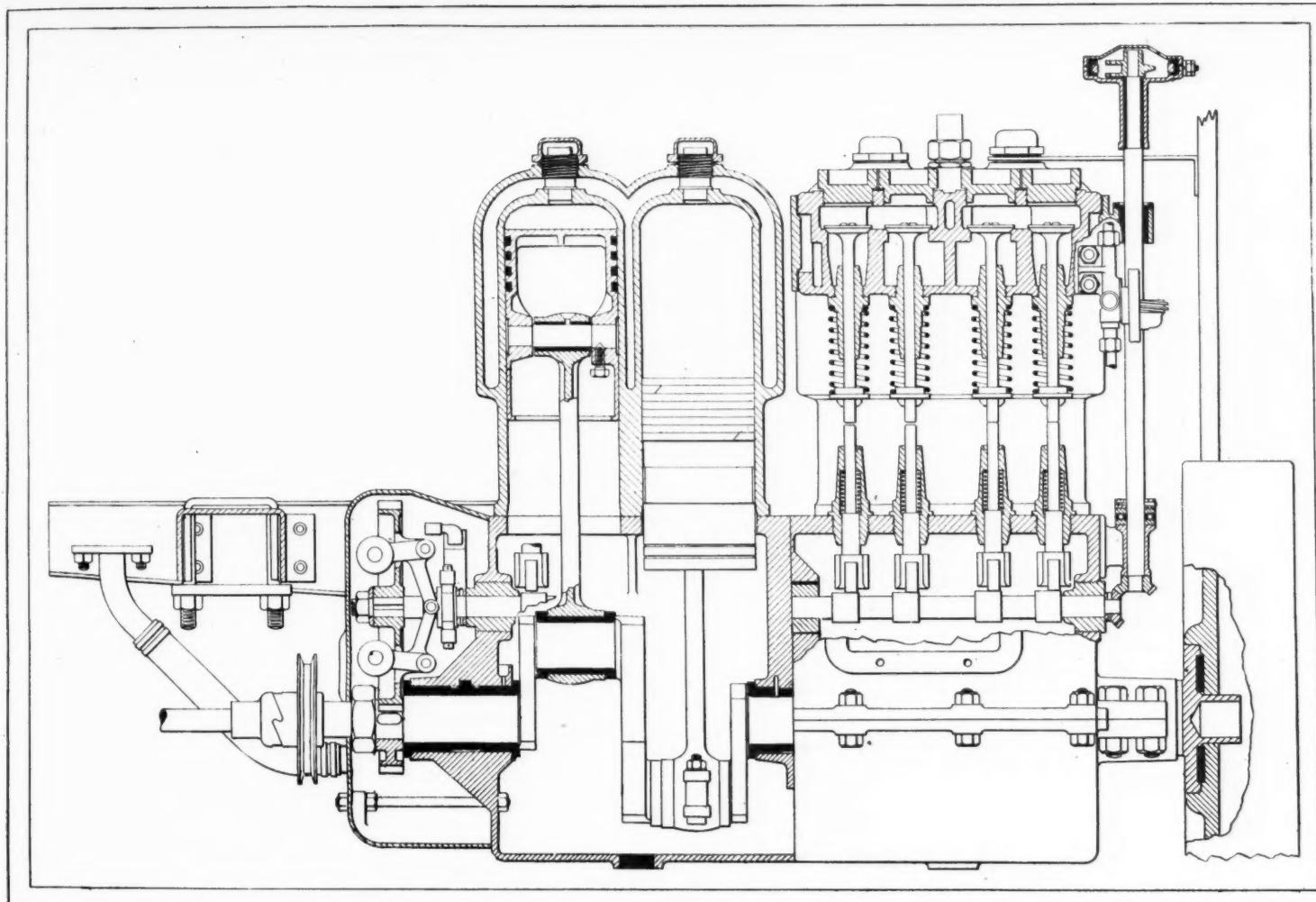
In transmission the Packard is almost unique. The motor is considered as one unit and the speed changing and final transmission as another unit. The speed change set, consequently, forms a part of the rear axle group and is connected to the fly wheel clutch by a uni-



MOTOR AGE

SECTIONAL ELEVATION OF PACKARD CHASSIS





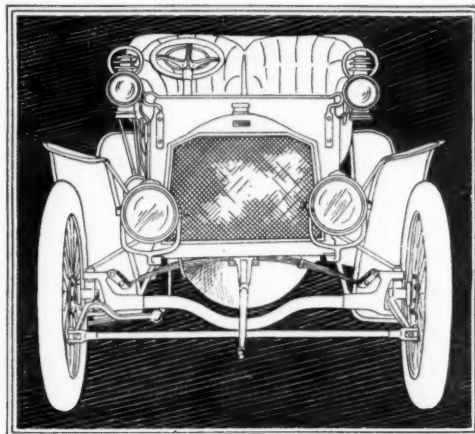
SECTION OF PACKARD FOUR-CYLINDER MOTOR

versal jointed propeller shaft. The clutch itself is within the fly wheel, being of the expanding pattern. The clutch shaft is at its front end, supported in a bronze-bushed bearing in the extremity of the motor crank shaft, while its rear end is supported by a ball-bearing mounted on the running gear frame. A clutch drum with a portion of its rim cut out is rigidly fastened to this shaft and is surrounded by a leather-lined steel band secured to the drum at one end and to a bell crank at the other, the bell crank being pivoted on the web of the drum. On the sliding collar of the clutch shaft, whereby the operating connections are made between the clutch and the pedal, is a short gear rack which meshes with a square pinion on a composite shaft which is forked at one end to connect with the free end of the clutch band bell crank. Normally the sliding collar is forced inwardly by a coil spring on the clutch shaft, and this movement shifts the gear rack to rotate the spur pinion in such a manner that the right and left threaded members of its composite shaft will be forced apart. This action causes the bell crank to be turned so as to expand the steel band to cause it to grip the inner periphery of a concentric flange on the fly wheel. The clutch is consequently locked unless it is released by depression on the pedal whereby the sliding collar on the clutch shaft is drawn outwardly against the pressure of the coil spring.

The speed changing set is of the sliding gear variety, furnishing three speeds forward and a reverse drive, and is entirely enclosed within the composite casing which forms the rear axle structure. Ball bearings are used throughout this portion of the car's mechanism, and most of these bearings are of double rows of balls; in fact, all of them, except the

straight end thrust bearing behind the bevel pinion, which drives the bevel gear on the differential.

The main shaft of the transmission gear is coupled directly to the propeller shaft with its middle portion squared to receive two sliding gears. The rear end of this shaft is within a bronze bushing in a steel sleeve, on one end of which is integrally formed a spur gear and on the rear end of which is fastened the final drive bevel pinion. On the secondary shaft there are two fixed gears with either one of which the corresponding sliding gears on the main shaft may be engaged, the latter being moved by shifter rod manually controlled. The shifter rod is within a long bearing and has four annular grooves corresponding to its four different positions, each of which may engage steel balls pressed toward the center of the shifter rod by coil springs within small pockets.



MOTOR AGE

PACKARD MODEL L

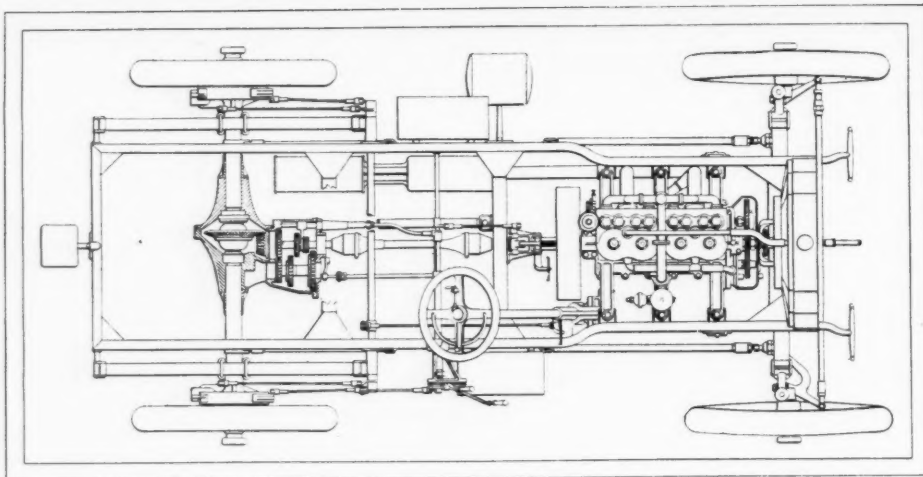
This ball and groove engagement is the operator's guide to the proper engagement of the gears when making changes. Two of the forward speeds are of course obtained by the respective engagements of the sliding gears on the main shaft with the corresponding gears on the secondary shaft, the transmission from the latter being through a fixed idle gear to the bevel pinion-carrying-sleeve spur gear around the main shaft. The reverse is secured as ordinarily, by bringing an idle pinion on a stud shaft into engagement with one of the sliding gears and the latter's corresponding secondary shaft gear at the same time.

The high speed drive is direct and is obtained by bringing the rearward of the two sliding gears into engagement with internal teeth on the sleeve gear, whereby the main shaft, sleeve gear and bevel pinion are locked to rotate as one piece. The secondary shaft gears then run idly.

The differential gear is of typical bevel gear construction, upon a centrally divided live axle. The spur gears in the speed changing set are of No. 6 pitch and of  $\frac{7}{8}$ -inch face. The bevel pinion and gear are of No. 5 pitch and being of 20 and 52 teeth, respectively, give a direct or high speed final reduction of 1 to 2.6. The speed ratios of the low and intermediate speeds are substantially 1 to 4 and 1 to 10, while the reverse drive is the same as the low speed forward.

The rear axle is  $1\frac{1}{2}$  inches in diameter, being of solid steel and is incased within a steel tube  $2\frac{5}{8}$  inches in diameter, which is fitted into the aluminum differential gear case, the joint being braced by webbed sleeves, which are flanged and bolted to the aluminum casing.

There are two independent brake systems,



MOTOR AGE

PLAN OF PACKARD CHASSIS

both of which act upon the rear wheel hub drums, one comprising external band brakes and the other internal expanding brakes. The former are operated by a pedal and the latter by a side lever, and both systems are interlocking with the clutch. There are two other side levers, one for the forward speeds of the transmission gear and the other for the reverse.

The spark lead and throttle control are, as previously explained, manipulated by levers on the steering wheel. The muffler is double, consisting of an expanding chamber and a silencing chamber. The first is a simple cylinder, through which the exhaust gases pass on their way to the other chamber which has two concentric compartments with perforated walls.

The body and bonnet of the car are of aluminum, the former being built over a light wood frame from sheet aluminum stock. The fenders also are of sheet aluminum. The front seat is divided and the tonneau provides two corner and a door seat. The body is finished in dark blue, striped cream color. The running gear is a light yellow, striped in blue and black.

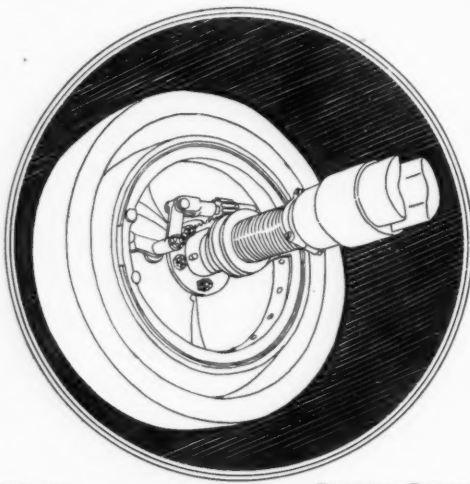
#### PLANS AUTOMOBILE ROAD

Cleveland, O., April 11—An automobile highway from Cleveland to Toledo is the proposition which has been broached to several prominent Clevelanders by J. N. Bick of Toledo, a well-known contractor and builder of electric and steam railways. Mr. Bick is at the head of the Toledo Motor Car Co. of Toledo and is an automobile enthusiast of the first water, as he uses his car practically all the time in construction work. Recently Mr. Bick unfolded his scheme to a party of Toledo and Cleveland gentlemen, and although it was deemed rather radical at first, they were forced to admit after hearing the promoter's explanations that the proposition might not be altogether impractical.

Briefly Mr. Bick proposes to build a 20-foot highway from Cleveland to Toledo by way of the larger towns, the distance being about 118 miles. The road would be of cheap construction and would be built on private right of way, with bridges over all highways and railroads. Brick would be used for the surface and timber for the bridges. Little grading would be required because with good surface an automobile can surmount any reasonable grade; in fact, the only expensive essential of the road would be the providing of good drainage so that the surface could be kept even.

Mr. Bick figures that such a road could be built for about \$8,000 per mile, including right of way, or about \$900,000 for the entire road from Cleveland to Toledo. The cost of main-

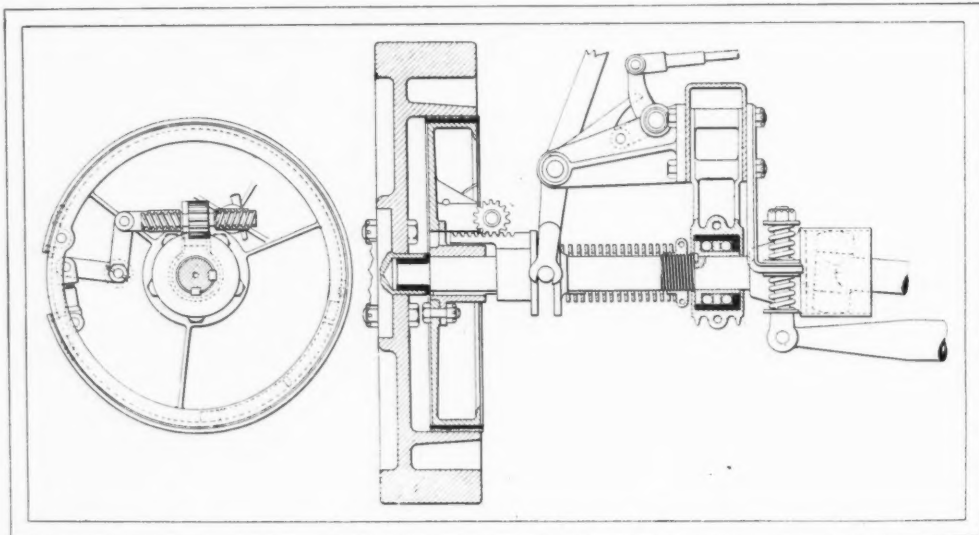
tainance of such a road would be practically nothing, and the only heavy expense would be the interest on the investment. Mr. Bick believes that tolls alone would yield an excellent revenue. Automobilists from all parts of the country would frequent the highway and many people who do business in the two cities mentioned would use automobiles in preference to



MOTOR AGE

PACKARD CLUTCH

taking a train and would be willing to pay a reasonable toll for the privilege of using the highway. In addition to this Mr. Bick claims that an automobile bus line would be a source of good revenue. The electric line between the two cities now makes the run in 4½ hours, and Mr. Bick claims that high speed automobiles could lower this mark considerably, making them a desirable mode of transportation between the two centers.



MOTOR AGE

ELEVATION AND SECTION OF PACKARD CLUTCH

Thus far the proposition has not assumed tangible form, but the gentlemen to whom it has been broached are thoroughly interested and have confidence in its possibilities. Mr. Bick claims that it will only be a matter of a few years before such highways will connect all the important centers of the country.

#### BUSY AT HARTFORD

Hartford, Conn., April 11—President Vreeland, of the Metropolitan Traction Co., and Harry Payne Whitney, directors of the Electric Vehicle Co., have been at the plant during the week looking over the work that is now in progress. The comments of the directors were favorable to the administration of President M. J. Budlong. They expressed themselves as well pleased with the way the product is coming through, and were delighted that the orders were so great as to warrant the operation of many departments 24 hours a day, and that all departments were running late into the night.

While in Hartford they were put up at the Hartford Club, and they enjoyed a number of short rides into the country about Hartford. Mr. Whitney drove one of the big new cars over the Talcott mountain fastness, made bad by the frost coming out of the ground and the April rains.

Work is now going forward at the factory on an order for four electric cars for Andrew Carnegie, an opera bus, landau, brougham and Victoria. The cars are to be completed and delivered to Mr. Carnegie's new \$20,000 automobile stable in New York by the first of September.

The country about is being traversed by a large number of test cars. The Pope Mfg. Co.'s force now includes eight test men who are running Pope-Hartford cars with special test bodies about the county, day and night. The product is said to be coming fast and that there will be no trouble about making deliveries.

George E. Sykes, of Rockville, Conn., is to make a honeymoon tour of Europe in a four-cylinder Columbia touring car, special equipment for which is now being fitted at the Electric Vehicle Co.'s factory. Sykes will attempt to cover the itinerary so charmingly described in *The Lightning Conductor*. While many of the electric vehicles made in Hartford have been shipped to Paris and London, Sykes' car will be the first of the Hartford-made gasoline cars to be operated in the camp of the enemy.



# NEW YORK GARAGE GOSSIP



Hollender & Tangeman will give their first boat a public time trial over a measured mile at Bayonne, N. J., this week.

A three-cylinder Thomas car containing several improvements over those exhibited at the shows has been received by Woolston & Brow.

The vogue of the Orient buckboards is on the increase. E. J. Willis, the local agent, reports the sale of eleven of the little fellows last week.

The fine work the Knox, Olds, Columbia and Pope-Waverley delivery wagons did in the A. C. A. test caused many inquiries for them at the agencies last week.

The American rights for a French non-skidding and non-puncture tire shield has been secured by the F. A. La Roche Co. The head of the leather shield is studded with iron knobs. Mr. La Roche says he saw a cab in Paris, whose tires had been run for 2 years without reinflation.

The American de Dietrich Motor Car Co. has moved into its new garage on Thirty-fourth street formerly occupied by the Auto Import and Waldorf Automobile companies. Five 30-horsepower cars have been received and the first shipment of an order of twenty-seven from 40 to 80-horsepower are on the way here.

The rapid completion of the subway is a matter of joy to Manager Plummer, of the Locomobile garage at Seventy-sixth street and Broadway, on account of the consequent fact that for the first time in several years the street in front of the repository is in good traveling condition, and this naturally has a considerable effect upon business.

E. J. Phelps, who has charge of the Phelps Motor Vehicle Co. branch just opened on West Thirty-eighth street, says the demand for demonstration of the 20-horse power three-cylinder touring car is already large. The fame the Phelps won last year in Mount Washington and in the Eagle Rock, Orange and Commonwealth avenue, Boston, climbs has made the car well known and easy of introduction to New Yorkers.

It is said that Eddie Bald, who is now studying the construction of the Columbia cars as a workman in the Electric Vehicle Co.'s factory at Hartford with a view to driving a racing machine on the track later in the season on the completion of his apprenticeship, will be installed as a salesman and demonstrator in the New York branch until the racer is ready for him to take the helm. The former bicycle champion enjoys a large acquaintance and great popularity among the horsemen and general sporting fraternity, which will give his "say so" much weight to say nothing of the mention of personal favor.

L. A. Hopkins, manager of the Brooklyn Automobile Co., which has garages in New York and Brooklyn and the wholesale agency for an adjacent territory including Philadelphia and Connecticut for the Haynes cars, has returned from the Kokomo factory. He says the output has been increased from forty-five to sixty per week. The Haynes is very popular in this district and hitherto the supply has far from equaled the demand. Last season his company could get but one-half of the cars for which it contracted, and had to return 23 per cent of the deposits received on orders.



Regular shipments will now permit the giving of a money guarantee of delivery.

Mr. Landon, of the Standard Automobile Co., gave a mounted copper a deserved call-down the other day. He was demonstrating a car on Fifth avenue to a prospective purchaser, when the policeman rode up alongside and begun to berate him and threatened him with a \$50 fine if he did not slow down. After depositing his customer at his destination Mr. Landon drove back up the avenue and hunted up the policeman. "Don't you dare to ride by me and threaten me again," said he, "or I'll report you to Commissioner McAdoo. I was trying to sell a car to a customer and you were doing your best to disgust him with automobilizing. If I was exceeding the speed limit it was your duty to arrest me. You had no right to annoy me by threatening me." The copper rode sheepishly away.

The New York Electric Maintenance Co. has recently added an automobile department, which is located at 157 East Fifty-fourth street. The maintaining system includes storing, charging, ordinary repairing for which a specified monthly amount will be paid. This will enable the owner of an electric car to know exactly what it will cost him to maintain his automobile. Many automobilists have already made contracts with the company and they seem well pleased at the arrangement which will do away with a great deal of bother in the way of settling bills every once in a while. The company takes care of the storage batteries in a scientific way, it claims. Every week each set of batteries is taken out of the vehicle for inspection and the temperature, specific gravity and voltage of each individual cell is tested and remedied if any trouble is found.

Motor boats and automobiles are becoming inseparably merged, both from the standpoint of sport and trade. In the garages of the coterie of importers and makers, the gossip these days is almost as much of the water as of the land. The new sport has been taken up by tradesmen of repute and means, who seem likely to see to it that it has an inauguration that will insure public enthusiasm and confidence. Hollender & Tangeman opened the trade campaign by showing an eagerness for public demonstration through speed trials and to this end issued challenges and made a notable match, which is to be decided at Larchmont in June. Smith & Mabley promptly accepted the challenge and further by suggesting an open race, in which the first importers readily acquiesced. Smith & Mabley have taken another step further toward the protection of purchasers practically ignorant of the new game

and at the mercy of the trade at this early stage of the new sport. It takes the form of a signed and indisputable guarantee to even the speed of all boats bought for racing purposes. In these purchases miles per hour mean hundreds of dollars in value just as seconds per mile do in the case of trotters. They agree to guarantee a fixed number of miles an hour to be shown in a time trial on a recognized mile course. If the guaranteed speed be not attained the purchaser may have his deposit returned and be released from his contract. On the other hand, though, he must pay a bonus of \$125 for every mile scored above the guaranteed speed.

## RECENT INCORPORATIONS

Buffalo, N. Y.—Star Automobile Co., capital 10,000. To manufacture automobiles. Incorporators, Daniel B. Driscoll, Elmer E. Chambers and Daniel Burgmaster.

Columbia, S. C.—Orangeburg Automobile Co., capital stock \$1,500. To sell and repair automobiles. Incorporators, A. C. Andrews, John McNamara and W. C. Wolfe.

Baltimore, Md.—The Larrimore Top Co., capital stock \$15,000. To manufacture automobile and buggy tops. Incorporators, George Ewalt, Robert N. Larrimore, W. Harry Ewalt, Thomas R. Ewalt and G. Latrobe Ewalt.

Rahway, N. J.—Commercial Truck and Power Co., capital \$50,000. To manufacture automobiles, air compressors and boilers. Incorporators, Henry A. Grube, Henry R. Lamphear and Fred C. Heyer.

Middletown, Conn.—Swan Mfg. Co., capital \$50,000. Incorporators, William J. Swan, of Middletown; Frank H. Harriman of Hartford and Z. E. Dowd of Meriden.

Cleveland, O.—American Automobile Co., capital stock \$50,000. Incorporators, Carl Dautel, Charles W. Demory, V. F. Bonhard, G. D. Rudd and J. H. Van Deven. This company will manufacture automobiles and parts.

Pittsburg, Pa.—Keystone Automobile Co.; capital, \$50,000. Directors, O. A. Vestel, A. P. Meyer, Pittsburg, and W. H. Foster, Allegheny.

Chicago—Drahonovsky Motor Co., name changed to Chicago Machine & Motor Works.

## NEW CLEVELAND COMPANY

Cleveland, O., April 12—Local capitalists have incorporated the American Automobile Co. at Columbus with a capital stock of \$50,000. The headquarters of the new industry will be located in Cleveland. Those named in the incorporation papers are Carl Dautel, Charles W. Demory, V. F. Bonhard, G. D. Budd and J. H. VanDeven.

Carl Dautel, attorney, who secured the incorporation papers, said yesterday that the plans of the company could not at present be made public. The purpose of the company, as stated at Columbus, is to manufacture and deal in automobile parts.

It is understood that one of the gentlemen mentioned has been experimenting with an air-cooled motor and it is probable that the company will build a car of this type.

## EXPORT TRADE GROWING

Automobiles to the value of \$127,247 were shipped abroad during February, as against a value of \$63,224 for the same month of last year. During the 8 months' period ending with February last the exports were valued at \$1,141,371.

# A. A. A. MOTOR BOAT RACE RULES

As MOTOR AGE predicted, the fight has come—it is now between the American Power Boat Association and the American Automobile Association, all over the control of the racing of fast motor boats. When the former body attempted to assume jurisdiction over the American end of the Harmsworth cup race, it bit off just a little of the other fellow's apple, with the result that a pretty fight may ensue, with all in favor of the aggressor.

When the A. A. A. has finally completed its merger with the A. M. L. the present association of clubs will be augmented by several thousand individual motorists, all of whom are more or less interested in motor boats and motor boat racing.

The A. A. A. has jumped into the field with the simple announcement that it has assumed control of racing and by the publication of the following set of rules for the conduct of races:

The following principles have been taken as a guide in framing the following rules:

A. The American Automobile Association is the sole authority in America for the regulation and control of strictly high-speed motor boats—racing boats.

B. The spirit and intent of these rules is that a race is run—sailed—and won by a combination of the motor boat, its pilot and one passenger, who may act as an engineer, and that this combination must continue till the finish without modification.

Nothing in this subdivision shall be construed to debar an owner from carrying more than the two passengers required—viz., engineer and pilot.

SANCTIONS—Clubs and associations affiliated with the American Automobile Association may, upon filing application with the racing board, receive sanctions for regattas under these rules, without fee; clubs, associations or individuals not so affiliated may upon application to the racing board receive sanctions, provided a fee of \$10 accompanies such application.

Must give name of club or association, location of organization, nature of organization, date or dates of proposed regatta, number of events scheduled, number and value of prizes, names of regatta officials, length of course or courses and a brief description of same.

The racing board reserves the right to refuse sanctions.

ELIGIBILITY—Motor boats, to be eligible for competition under these rules, must be registered by the racing board. With the registration there shall be filed full data as required by the official measurer and the official engineer.

REGISTRATION—Motor boats shall, upon registration, be assigned a serial number, and the owner shall receive a certificate of the official engineer.

REGISTRATION FEE—Before the certificate of registration shall be delivered to the owner there must be paid to the racing board a fee of \$25 for each boat measured and classified as to horsepower.

MEASUREMENT—Load water line shall be the distance in a straight line between the points farthest forward and farthest after where the hull, exclusive of the rudder stock, is intersected by the surface of the water, when the boat is afloat in racing trim, in smooth water, with two persons aboard stationed amidships, while the measurements are being taken.

If any part of the stem, stern post or other part of the boat—except the rudder—below the water line projects beyond the length thus measured, such projection shall be added to the measured length; and a form resulting from the cutting away of the fair line of the stern stem, stern post or the ridge of the counter, for the apparent purpose of shortening the load water line, shall be measured between fair lines. If the stern has a flattened underside, the load water line shall be measured to the extreme after end of the fair lines, of the under body. When a boat is officially measured her fuel tanks may be empty. Boats must be measured at least once during a calendar year, and remeasured so often as may be deemed necessary, owing to changes or alterations to hull or motor.



HORSEPOWER—The rated horsepower of the engine shall be based on the total area of cylinder bore for all the cylinders, or the sum obtained by adding together the separate areas for each cylinder, each area being the product obtained by multiplying 0.7854 by the square of the piston diameter. Unless the cylinders are known to be of different diameters, one cylinder shall be selected at random, and its bore shall be assumed to be that of all the others, the piston speed shall be assumed to be the same for all motors.

The owner shall provide every necessary facility to the measurer for obtaining the piston diameter, and no boat in which the piston diameter or diameters have not been ascertained to the measurer's satisfaction shall receive a certificate of classification or be allowed to take part in a race sanctioned by this association.

For the purpose of these rules the horsepower of the motor, if of the four-cycle type, shall be calculated on the basis of an assumed piston speed of 1,000 feet per minute and a net mean effective pressure, after deducting internal friction losses, of 66 pounds per square inch. It shall therefore be considered to be equal to one-half of the total area of the cylinder bore, as above, measured in square inches. The horsepower of a two-cycle engine shall be calculated on the basis of a piston speed of 1,000 feet per minute and a net mean effective pressure of 44 pounds. It shall, therefore, be considered to be equal to two-thirds of the total area of the cylinder bore in square inches. In measuring the cylinder areas, an allowance of 1 per cent may be made for error in bores.

CLASSIFICATION—All boats shall be divided into the following classes, according to their load water line length:

Class A—All boats not over 26 feet on load water line.

Class B—All boats over 26 feet and not over 32 feet.

Class C—All boats over 32 feet and not over 40 feet.

Class D—All boats over 40 feet and not over 50 feet.

Class E—All boats over 50 feet and not over 65 feet.

The maximum nominal horsepower, under rule 8, which boats of the several classes may carry shall be as follows:

Class A—30 horsepower.

Class B—50 horsepower.

Class C—90 horsepower.

Class D—180 horsepower.

Class E—400 horsepower.

In addition to the above regular classes there shall be a special class for boats whose hulls measure not more than 40 feet in length over all, with no limits on displacement, beam or horsepower, to be known as the American Automobile Association special class:

Class.	Length.	Minimum W. L.	Maximum H. P.
A	All boats not over 26 ft.		
	L. W. L. ....	3 ft. 9 in.	30
B	All boats over 26 feet and not over 30 feet L. W. L.	4 ft. 2 in.	50
C	All boats over 32 feet and not over 40 feet L. W. L.	4 ft. 9 in.	90
D	All boats over 40 feet and not over 50 feet L. W. L.	5 ft. 6 in.	180
E	All boats over 50 feet and not over 65 feet L. W. L.	6 ft. 6 in.	400

Special AAA—All boats not over 40 feet over-all hull length, no restriction or limitation.

CREWS—The total number of persons aboard any boat competing in a race shall not be less than two.

EQUIPMENT—Every boat shall be fitted with reversing gear capable of propelling her astern at a speed not less than 4 knots per hour.

At least one serviceable anchor weighing ½ pound per foot of load water line and 10 fathoms of manila cable shall be carried on each boat; and each boat shall have on board as many serviceable cork life buoys as the total number of persons aboard.

Each boat shall carry one pair of oar locks and oars. No boat shall be allowed to compete unless equipped with the necessary lights required by law, and a fog signal.

REGATTA OFFICIALS—There shall be one referee, three judges and three timers who shall act in their respective capacities at the start and finish. There shall be one umpire for each stake, buoy or mark turned, who shall report all foul turns or interferences. All officials to be named by the promoting organization approved by the racing board.

REGATTA COMMITTEE—The regatta committee shall be charged with the duty of all preliminary arrangements; with the expedition of the events scheduled; and with such offices as may be required of them by the referee. This committee shall provide transportation for all officials and must have a dispatch boat at the disposal of the referee.

WALK-OVER—SAIL-OVER—In case but one boat reports to start in an event, the referee may announce the minimum time in which the course may be covered.

APPEAL FROM REFEREE'S DECISION—The owner binds himself, in case of dispute or accident, to abide by the decision of the referee, or as a final resort to appeal to the racing board, and waives the right, in any case, to appeal to the civil courts.

FALSE ENTRY—If an owner races or allows a boat to race which no longer conforms to the certificate of registration, or under a false certificate of declaration, he shall be disqualified, until his boat be remeasured as provided in rule 6.

POSTPONEMENT—In case the sea or weather should prove dangerous, the regatta committee, the referee concurring, may postpone a race or regatta.

After a race or regatta has started the same may be postponed, as provided in rule 17.

In cases of postponed races only those boats which have started may start when the race is again taken up.

ANCHORING—Anchor may be cast in a race, but it must be taken aboard again before the race is resumed. Boats must not lay to alongside of another boat, buoy, pier or mark. Any means of holding the boat to the ground, other than by anchor, except of cases of possible accident to life, shall disqualify.

EMBARKING AND DISEMBARKING—No person shall, during a race, embark or disembark from a competing boat, except in case of accident.

GROUNDING—Grounded boats must be floated only by the efforts of the crew. If they are so floated they may continue in the race.

JACK-STAFF—Each boat must carry at the bow a small jack-staff, at least 5 feet high from deck to truck, and carry when competing:

a A red flag at the trunk at least 12 inches on the hoist and 18 inches on the fly with its serial number numeral in white. Figures must be at least 8 inches high and 5 inches broad, and must be visible on both hands; and,

b A suitable flag of like dimensions to be designated by the regatta committee. The color to indicate the class as provided in rule 9.

STARTS—A warning flag, indicating the class to be called, shall be hoisted on the committee boat 15 minutes before the starting gun. As further warning the hoisting of this flag shall be accompanied by the firing of two guns from the committee boat. After a lapse of 13 minutes a second or preparatory gun shall be fired. After a lapse of 2 minutes the starting gun shall be fired, from which the times shall be taken. The firing of the starting gun shall be accompanied by the lowering of the flag of the class just started. After a lapse of 5 minutes the preparatory gun for the second class shall begin, and so on. No boat shall cross the starting line before the instant of firing of the time limit gun. If a boat shall have crossed prior to such instant, it must return and again cross. Boats in returning must return bow first, keeping clear of competing boats. Boats in returning to re-cross the line shall not interfere with other boats regularly started, under penalty of disqualification for competing in that event. Boats may manoeuvre at will prior to the limit gun. Boats which do not start within 5 minutes after the starting gun shall be disqualified from starting.

CHALLENGES—Challenges for competition under these rules must be made through the racing



board, accompanied by a forfeit fee of \$100. In case the challenger fails to appear at the appointed times and place this fee shall be divided into equal parts, one-half going to the challenged party and the other half to the American Automobile Association, to compensate its official measurer and engineer for measurements made.

All special conditions must be approved by the racing board before the start. Challenges contemplate boat for boat, without handicap or allowance.

**TRIALS**—Record and time-distance trials, to be authenticated must be: a, sanctioned; b, previously announced; c, over a course accurately measured; d, timed by approved timers.

No stated fee shall be exacted for such trials, but the owner must assume the expense and insure transportation for proper officials to and from the course.

**NAVIGATION RULES**—The following navigation rules must be followed under penalty of disqualification: In case two boats approach one another, so as to involve risk of collision, one of them shall keep off as follows:

A—When meeting end-on the course of each shall be altered to starboard.

B—When crossing courses, the one which has the other on her starboard side shall keep off.

C—In any condition provided for by these rules, one boat must keep off, the other holding her course and speed.

D—A boat which is, by these rules, warned off from another, shall, if the circumstances of the case admit, avoid crossing ahead of the other.

E—Boats which are directed by these rules to keep off shall on approach, if necessary, slacken her speed, stop, and, if necessary, reverse.

F—Overtaking boats shall, in all cases, keep off from the overtaken boat.

G—Obedience to these rules contemplates due regard of all dangers of navigation and collision, and of any special conditions which may make necessary any deviation from these rules in order

that danger may be averted. In cases of boats under way, when approaching each other so, their courses shall be indicated by the following signals on either whistle or siren, viz.:

One short blast shall mean "My course is to starboard." Two short blasts shall mean "My course is to port;" three short blasts shall mean "I am reversing at speed"; five or more short blasts means general warning or to attract attention.

As soon as an overlap shall exist the overtaking boat must keep well off the boat which is being overtaken.

Boats, in overtaking or passing, must allow at least 20 feet of clear water between them, and the overtaken boat shall not alter her course so as to compel the overtaking boat to pass within this 10-foot limit.

Should, however, an overlap exist between two boats at a time when both of them are about to pass a mark, stake or buoy on the required side, then the outside boat must give the inside boat sufficient room to pass clear of the mark, stake or buoy. When a boat shall have altered her course for the purpose of rounding a mark, stake or buoy the overtaking boat shall not, under pain of disqualification, establish an overlap, so as to force a passage between the overtaken boat and the mark, stake or buoy. An overlap shall be considered to have been established when an overtaking boat has no longer a free choice of which side she shall pass. In case one of two boats is obliged to keep clear, the other boat shall not alter her course so as to involve a risk of fouling.

#### BIG FRENCH RACE ARRANGED

The Commission du Yachting Automobile of France has decided that the race for motor boats of 1904 will take place on Monday, August 8, about 10 o'clock in the morning, start-

ing from either Calais or Boulogne, and finishing at Dover. The entries for this race will be closed on the evening of June 30, and the entry fee will be 100 francs for boats up to 20 feet 6 inches and 200 francs for boats of greater length.

#### ABSOLUTE GUARANTEE

Smith & Mabley, of New York, makers of the Vingt-et-Un, have taken hold of the question of rated and actual boat speeds in a vigorous and commendable manner, by drawing a contract with the purchaser of a boat whereby the latter is released from accepting the boat ordered and is returned his deposit, if it does not make the minimum guaranteed speed in an actual trial on a measured course.

#### MOTOR BOAT NOTES

Raymond P. Hoagland, of Boston, is reported to have offered \$12,000 for a boat of 150 horsepower which is to be guaranteed the fastest motor boat afloat. The order fell to Hollander & Tangeman, who will fit the craft with two 75 horsepower Fiat motors.

A challenge has been issued by H. H. Buffum, of Boston, to Smith & Mabley and Hollander & Tangeman for \$1,000 a side or to the winner of the match race in June for \$2,000 a side, the entire amount to be expended for a trophy of the challenge sort, or to go to the American Automobile Association to defray a part of the expense of the club run.

## HIGH VERSUS LOW COMPRESSION

Reading, Pa.—Editor MOTOR AGE—"It is better not to know so much than to know so much that ain't so."—Josh Billings.

The subject of engine compression is one on which much misinformation exists. Some people seem to imagine that compression and power are proportionate to each other and that an engine having high compression must necessarily have high power and that if by any means they can increase the compression they have also increased the power. There is so little truth in this belief that some correction seems advisable.

In the first place the difference between perfect compression and high compression should be known and understood. An engine may have a low compression but a perfect one, by which is meant that there are no leaks about the compression chamber. It is readily seen that each leak means loss of gases, both before and after ignition, and this loss of gas, of course, decreases the power. The average man in turning over his motor determines by the difficulty with which it passes compression whether the compression is good or bad. He also knows that a high compression motor turns over with more difficulty than one with low compression, and since it is but a well known fact that a leaky motor cannot give good power he assumes that the high compression motor is the more powerful of the two and from this confounding of two separate things the error arises.

There is no ground for claiming that a high compression gives less power, and this claim is not made here, but simply that the relation between compression and power supposed to exist by most people does not exist except in possibly an infinitesimal degree.

The fact of the matter is that a given motor will draw in a given quantity of explosive mix-

ture, regardless of whether the compression is high or low. This given quantity of mixture contains a certain heat energy, and whether this motor converts a high proportion of this energy into power probably depends less on the compression than on any other one thing. A weak spark, a leaky valve, a faulty piston ring, improper timing, unsuitable springs, excessive cooling and many other factors will vary the result more widely than the mere difference between a high and low compression. And in addition to the factors which vary a given charge, other factors exist which influence the size of the charge and thus influence the power.

A high compression is secured by the use of a small combustion space, into which small space the new charge must be compressed, and since this new charge is diluted very little by the gases of the former charge, the explosion is correspondingly more violent and the resultant pressure, consisting as it does, of the high compression, multiplied by the given heat energy liberated, is exceedingly high at the beginning of the working stroke. This high pressure and high temperature result in a rapid loss of heat through the cylinder walls and of gas through any leaks, as well as a rapid fall as the piston moves outward. The compression space or storage reservoir being small, is unable to follow the piston with a large volume of gas, with the result that, when the exhaust valve opens, the pressure is found quite low.

With a low compression, having a large compression space, more burned gases remain, thus diluting the new charge and both absorbing the heat of combustion and cushioning the pressure as well as keeping down the losses to the cooling walls and through leaky joints. As the piston moves outward this large body of gas does not lose pressure quickly, but maintains a more

nearly constant pressure, thus resembling a steam engine, and exhausts with a deeper, louder sound.

The high compression result is unquestionably best where speed is desired, but for slow, hard pulls such as in hill climbing, bad roads and slow speeds on the high gear, the low compression gives best results. It produces less vibration, requires less dead weight of fly wheel, is not affected by leaks and inattention so readily, and nearly approximates steam engine results.

It is well known in mechanics that speed and power are interchangeable and that a given amount of energy can be expressed either in high speed with little power or high power with little speed and there is no doubt that this is true in the cylinder of a gasoline motor to a very considerable degree.

The final and best proof of the value of high or low compression is undoubtedly found in efficiency tests of both types of motors. The common gas engine employs compressions running from 50 to 75 pounds and has shown efficiencies as high as 28 per cent. The Diesel engine, working on a different principle and employing compressions up to 500 pounds per inch or higher, claims an efficiency of 35 per cent. Assuming other things to be equal, this is adding 1.28 to the power of the common gas engine for each 65 pounds increase in compression, a gain so small that it is more than likely lost by inattention to little conditions like leaky valves, as before stated. It may be assumed with reasonable safety that if the ordinary gas engine, which is employed for stationary work because it is economical, is not built with a high compression, the automobile motor used with less care and less regard to economy may safely be considered best with low compression.—CHAS. E. DURYEA.

## FROM THE FOUR WINDS

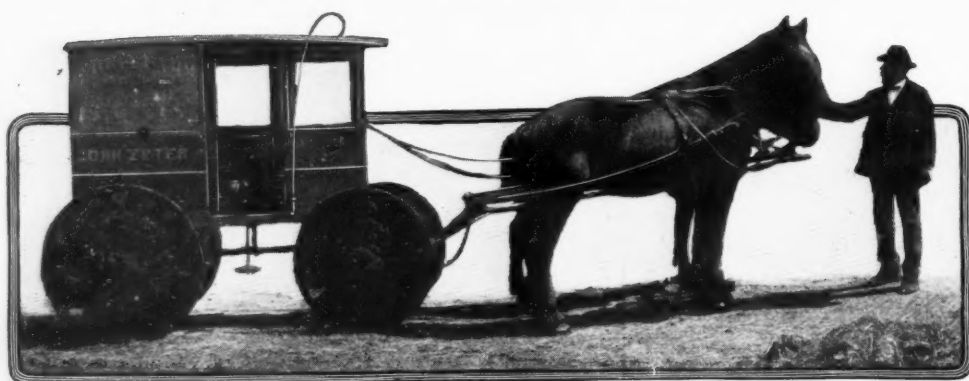


PHOTO TAKEN AT LINCOLN, ILL.

RESULT OF DRIVING ON "IMPROVED" ILLINOIS ROADS

### THE COUNT PROTESTS

Paris, France, le 30 Mars—M. le Redacteur—There is a Madame du Gast in Paris which has stirred up the blood of the French automobil clan to such an extent that there two strong following: the one being called the pro-Gasts and the other the anti-Gasts.

At once the decision of the sport's committee of the Automobile Club de France, restricting women to take part in the elimination trials, was commented in a moderate way, and generally people thought the right way had been taken. But since, Madame du Gast has written several letters to the members of the committee, which have been published in the trade and daily papers and have brought forth a sudden strong wave of sympathy in her favor. As a matter of fact there was really no other woman in France against whom the decision could have been directed, inasmuch as Madame Lockert is a tourist, and while having followed some of the big races, never took part as a lady racer, like Madame du Gast.

Several prominent firms having been asked to express an opinion concerning the case, stated that while they do not favor women drivers, and particularly in such an important race, they cannot help but make an exception in this case, as Madame du Gast has given every evidence of being a most extraordinary good and careful driver, who never had any accident, and who, in many instances, showed a great deal more coolness, better judgment and nerve than many male drivers.

The first woman driver of France has made a final appeal to the sports committee to reconsider its decision and allow her to take part in the race. Whatever will be the committee's reply, it is sure that Madame will have on her side some of the most influential members of the French trade and sport.

I, like many of my compatriots, must say I favor the madame.—COUNT CHASSIS DE GARAGE.

### FREDERICKSON'S FIX

H. E. Frederickson, an automobile dealer of Omaha, Neb., visited N. P. Updike at his office a few days ago and found him making arrangements to leave town. As Mr. Updike was in a hurry he asked Frederickson to take his automobile to the store. The automobile was standing in the street in front of the building. When Frederickson went down he found a crowd around the machine and a policeman guarding it.

"Whose machine is this?" asked the policeman.

"It belongs to Mr. Updike," said Frederickson, trying to make out what the trouble was about.

"Then what are you going to do with it?" was the next question.

Frederickson tried to explain, but the doubting eye of the policeman and the laughter of the crowd made him excited. Finally the policeman said that according to the story the machine was in Frederickson's charge, and therefore Frederickson was under arrest for leaving an automobile in the middle of the street. The officer gave him the option of riding with him in the patrol wagon or taking himself and the officer to jail in the automobile. The automobile was chosen and shortly after Frederickson was released by signing his own bond and promising to appear the next morning.

An ordinance regulating the speed of automobiles in Quincy, Ill., was passed a few days ago. It specifies that the speed of motor cars on the streets of the city shall not exceed 8 miles per hour in the district bounded by the river on the west, Twelfth street on the east, Spring street on the north and Ohio street on the south. In other parts of the city the speed may reach 10 miles. All cars must be provided with a gong or horn, brakes and lamps. The cars must be numbered on the rear of the machine and the figures must be at least 3 inches in height. Every owner of an automobile must register his name and number with the city clerk. The first offense in violating the ordinance will result in a fine of from \$10 to \$100; subsequent violation will be punishable with a fine ranging from \$25 to \$100.

The bad condition of the roads in and near Schenectady, N. Y., was the principal drawback in the past for the increase in popularity of motoring. The present season seems to indicate that many cars will be sold, judging from local information. The people are buying cars, although the roads are still very bad and a movement is on foot to urge the city authorities to have the principal streets and roads repaired and made rideable. Ben Burtis, located in Jay street, is the local agent for the Stevens-Duryea, the Orient buckboard and the Pope-Toledo cars; Stewart Vrooman, 412 Union street, handles the Rambler line; Phillip Ryan, Lafayette street, handles the Marsh, Merkel and Indian motor cycles.

Weaver & Co., who are the agents for the Oldsmobile and Studebaker cars in Cedar Rapids, Ia., have added a salesroom and repair shop to their building.

The first cycle show in Agricultural hall, London, was in 1896, when bicycles and accessories formed the exhibit exclusively. At the following year's show several motor cars were exhibited, and the number increased the year after. In 1899 there were seventy automobile exhibitors, and in 1900 the number was ninety-four. There were 154 at the show the following year, and 238 in 1902. There was but a slight increase of exhibiting firms in 1903, the total being 247, but during the following 12 months a great number of new concerns seemed to have come into existence, because there were eighty-three more exhibitors at this year's show, there being 330 altogether.

One of the laws made by the 1904 legislature of New Jersey provides that all automobile license numbers of other states be removed from cars when they enter New Jersey territory, and that only the license number of that state be displayed. The law is due to the fact that out-of-state automobile owners been frequently stopped by constables to ascertain if the several license numbers carried included the genuine Jersey article.

Automobile owners of Knoxville, Tenn., met last Wednesday in a preliminary meeting to organize an automobile club. Cowan Rogers, acted as chairman and Dr. J. H. Kincaid secretary. A committee consisting of R. L. Rodgers, Henry Howard and Dr. Cochrane was appointed to draw up a constitution and by-laws, and when this work is done a meeting will be called to effect permanent organization.

Franklin P. Shumway, of Boston, who for 15 years has conducted an advertising agency, last week incorporated his business under the name of the Franklin P. Shumway Co., with a paid-in capital of \$30,000. Mr. Shumway has taken hold of the advertising of several prominent automobile concerns and his friends in this trade will doubtless be pleased to know of this advance.

The Swinehart Clincher Tire & Rubber Co., of Akron, O., has opened an eastern branch at 1784 Broadway, N. Y., under the management of W. C. Parsons. The Swinehart company has met with encouraging results in the introduction of its clincher-fastened solid tires and feels confident that this season will be a profitable one.

The chief of police of St. Louis, Mo., has issued special instructions to the police department to enforce the observance of the automobile speed ordinance, which provides that 8 miles per hour is the speed limit in the thoroughfares of the city and 6 miles in the public parks.

The catalogue of the Phelps Motor Vehicle Co., of Stoneham, Mass., describes the three-cylinder Phelps car, which has had such excellent success in hill climbing trials and contests. It is a plain, comprehensive booklet, fuller of facts than of rhetorical and illustrative flourishes.

At the first allotment of space for the 1905 Crystal Palace Automobile show, London, fifty-two early birds were assigned stands.

R. S. Crawford, former manager of the Crawford Bicycle, has started an automobile factory in Hagerstown, Md.



A number of automobilists of Hamilton, O., are planning a trip to the world's fair.

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The New Jersey Automobile Club is planning a race meet to be held May 30 on the Clifton track.

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Motorists of Youngstown, O., are planning to hold automobile races at the fair grounds in the near future.

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The Motor Union of England had 5,136 members up to March 22, when the annual meeting of the organization was held in London.

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It is reported that the Southern Electric Co., of Nashville, Tenn., which now uses nearly thirty horses will soon purchase automobiles and do away with all the animals.

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The Duntley washable storage battery cell, which may be quickly cleaned by turning the hose on it, is the subject of an illustrated circular issued by the Chicago Storage Battery Co., 1241 State street, Chicago.

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The baseball season in Binghamton, N. Y., will be inaugurated with a parade, in which automobiles will play the most conspicuous part. About fifty will be in line and dealers in the city believe the event will be beneficial.

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Newmastic filling, a plastic substance for lining pneumatic tires "to make old tires new and new tires puncture proof," in other words, to make an elastic cushion tire of a pneumatic, is described in a folder issued by Harry R. Geer, 1017 Pine street, St. Louis, Mo.

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An automobile repair shop has been added to the establishment of the Headson Tool Works of La Fayette, Ind. The department will be in charge of Gilbert Christian, who conducted a repair shop in the town for a number of years.

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A tour through Michigan, Indiana, Ohio, Illinois and Wisconsin is the undertaking which Dr. L. L. Conkey of Grand Rapids, Mich., has mapped out. The physician will be accompanied by his wife and two children and expects the trip to extend over several months of pleasure driving.

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One of the latest conversions into the motor field is that of John Fisher, the Chicago bicycle rider who for several years kept himself in a prominent position in the list of professional riders. Fisher is reported to have joined the staff of Orlando Weber, of Milwaukee, and will probably have charge of the latter's 90-horsepower racing car.

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Orlando F. Weber, the Milwaukee dealer, will be the possessor of a 90-horsepower Pope-Toledo racing machine about June 1. The car will be built with the intention of being able to cover the mile in 35 seconds. Weber will go to Florida to test the car and then take part in all the principal track races during the season.

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There are about twenty-five owners of automobiles in Kalamazoo, Mich., and local dealers claim to have received orders for about thirty more cars to be delivered as soon as they are received from the manufacturers. Several owners of cars met recently and decided to call a meeting of all owners of the town and form an automobile club.

Fire caused a loss of several thousand dollars last week to the automobile and bicycle store of L. F. Schoelkopf & Co., Madison, Wis.

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The Automobile Club of America concluded its winter series of weekly club nights on Tuesday with a smoker gotten up by Emerson Brooks of the house committee.

\*\*\*

Duncan Dorris and J. C. Symmes, both of Nashville, Tenn., will soon make an automobile trip to St. Louis, Mo., in order to map out a route to be taken by a party of Nashville motorists who intend to go to the automobile encampment at the world's fair.

\*\*\*

According to the Republic of St. Louis, Mo., automobiles are destined to be the most popular vehicles on the world's fair grounds, judging from the large amount of business the World's Fair Transportation Co. is doing. On April 3, it is claimed that the thirty big busses of the company carried 5,000 people around the grounds. The pass gate recorded an attendance of 10,159 that day.

\*\*\*

According to a Maine newspaper, an automobile factory will soon be located in Sanford. In commenting this feature, the News, of Bangor, says that there is not better field for this sort of business than in Maine, where the quality of skilled labor to be had and the infrequency with which that labor gets involved



MOTOR AGE

FUN ON ORMOND BEACH

with capital over disputes about wages or other matters combine to make ideal conditions.

\*\*\*

At a recent meeting of the city council of Macon, Ga., a new ordinance relative to the numbering and registering of motor cars was submitted to the councilmen. It stated that all owners of cars must register with the city clerk before April 15 and that the vehicle must be numbered. Some of the members wanted the number to be 3 or 4 inches in height, while others insisted upon 5 inches as the minimum height. The proposition was finally referred to the ordinance committee.

\*\*\*

At the annual election of officers of the Toledo Automobile Club, Toledo, O., a proposition was discussed dealing with the renting of the Empire hotel to transform it into a country club. The hotel is located near Stony Ridge, 12 miles from the state road, will be repainted, and fixed up shortly. The club decided to wait until the next meeting before taking final steps in the matter, because many of its members have expressed the wish to visit the prospective club house before making a decision. The following officers were nominated for the current year: Edward J. Marshall, president; Noah Whitney, vice president; Dr. C. P. Wagar, secretary and treasurer. In the election for directors Peter Gendron, Frank Hake, W. D. McNull and C. A. Lacey were elected, besides

the officers mentioned above. Mayor Sam Jones was made an honorary member.

\*\*\*

The Washington government has been advised that under the new tariff law of Ecuador, which went into effect on January 1, 1904, automobiles are admitted free of duty. Gasoline is also duty free.

\*\*\*

Three new projects for automobile tracks near Paris have been inaugurated within the last few weeks. If these tracks, as well as contemplated nearly every month last year, were all completed they would cover a tract of land about 25 miles square.

\*\*\*

The Automobile Association of Berlin and the Automobile Club of Leipzig have arranged an endurance run for motor cars and motor cycles to take place May 8 from Berlin to Leipzig and return, approximately 225 miles. Small cars, which include all vehicles under 10 horsepower, will cover the distance to Leipzig, but must do so within 7 hours, while all other vehicles have 11½ hours to cover the entire course.

\*\*\*

At the Nantes fair in France, which will remain open from May 25 until September 1, a special building has been added for the automobile and motor boat display. The exhibition committee did not intend at first to include a motor vehicle and boat section, but so many applications for space were received, thus assuring a success for this particular section that it was decided at the last moment to erect a special building for these exhibits.

\*\*\*

The McHenry County Automobile Club, of Illinois, was formed at Woodstock, Ill., last week. The following officers were nominated: A. J. Ouson, Woodstock, president; A. S. Towne, Harvard, secretary; E. C. Jewett, Woodstock, treasurer; F. R. Jackman, Woodstock, attorney. Eight vice presidents were elected, E. B. Manley, Harvard; J. H. Patterson, Marengo; J. W. Chewning, Algonquin; B. H. Taber, Richmond; John Douglas, Hebron; H. W. Watson, Nunda; T. J. Walsh, McHenry; Elmer Waterman, Greenwood.

\*\*\*

At a meeting of the Automobile Club of Fort Wayne, Ind., held April 6, the following officers were named: President, W. M. Griffin; vice president, O. N. Guldin; secretary, A. L. Randall; treasurer, Harry Meyers. The following committees were appointed by the new president: On good roads and legislation, Dr. L. P. Drayer, Daniel B. Ninde and Hugh G. Keegan; on runs and racing, Will H. Peltier, Dr. J. E. Miller and Thomas Baxter; on house and entertainment, Dr. E. Wright Dodez, Al C. Alter and Delmer Fitch. The club has forty-nine members.

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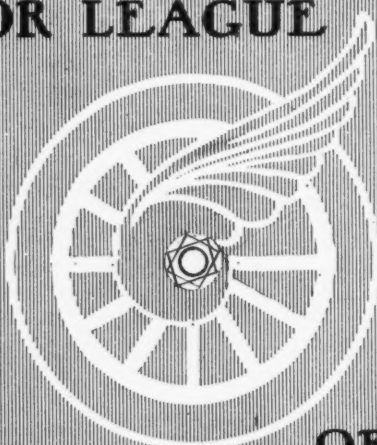
There are about fifty owners of automobiles in Birmingham, Tenn. Twenty cars were sold last year and a similar quantity the previous season when the motor craze was at its height in the Tennessee town. The only exclusive motor car dealer is the White & Blaklee Carriage Co., which has the agency for the Oldsmobile, Cadillac and Rambler. The Orient buckboard is handled by the Birmingham Arms and Cycle Co. There is a good deal of talk about forming an automobile club in the near future and arranging for some automobile race meetings.

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W. GRANT MURRAY, Second Vice-Pres.,  
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S. W. MERRIHEW, Third Vice-Pres.,  
154 Nassau St., New York.  
ROBERT L. STILLSON, Secretary,  
150 Nassau St., New York.  
FREDERICK B. HILL, Treasurer,  
32 Blinford St., Boston.

National Headquarters:  
150 Nassau Street, New York



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LOCAL ORGANIZATION—  
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TOURING—  
W. H. Baker, Buffalo, N. Y.  
TECHNICS—  
Charles E. Duryea, Reading, Pa.  
MEMBERSHIP—  
Frank A. Egan, New York, N. Y.  
SIGN BOARDS—  
John B. Price, Hazleton, Pa.  
RACING—  
A. G. Batchelder, New York, N. Y.  
PRESS—  
Joseph Estoclet, Philadelphia, Pa.  
HOTELS—  
Francis N. Bain, Newburg, N. Y.

## OFFICIAL BULLETIN

### THE A. M. L.—A. A. A. MERGER

An important question is about to be decided by the automobilists of the United States and especially by the members of the A. M. L. and the A. A. A. Two organizations have been looking to the same source for strength and support. Separate headquarters have been maintained, two sets of officers elected and the expenses of administration kept a figure at least double the amount that would be needed to conduct the affairs of a single national body. Between these two organizations the ranks of the automobilists have been gradually dividing and from month to month the problem of uniting these forces under one banner has become more and more difficult. Some rivalry has found place in the affairs of the two bodies and it may be that the strife for supremacy has not at all times been manifested in the most friendly way; but happily the controlling boards of both organizations have "carried ballast" and have always recognized the good that might come of an effort to unite the A. M. L. and the A. A. A. into one.

For some weeks conferences have been had between committees of the two organizations and by these committees a plan was finally evolved for bringing about the much desired union. This plan has been approved by the executive boards of both the A. A. A. and the A. M. L. and will be now submitted, by mail vote, for the approval of the membership at large. The plan of merger includes the following features:

1—The name of the proposed new organization is to be American Motor Association.

2—The property, assets and affairs of both the A. M. L. and the A. A. A. are to be taken over and managed by a board consisting of ten members of the A. A. A. and a like number of A. M. L. members—twenty in all—for the balance of the official year.

3—A committee of four—two from each organization—will prepare a new constitution and by-laws and submit it for approval and adoption by the managing board.

4—The constitution and by-laws will make provision for perpetuating those features of administration which have proven helpful and valuable in the management of the separate bodies.

5—A department of organization is to be formed and placed under the management of the secretary and carried on in a manner to insure the effective growth and success of the new body in its various departments.

6—The officers of the proposed new body are as follows: President, Harlan W. Whipple, now president of the A. A. A. and a member of both organizations; first vice president, Charles E. Duryea, now holding the same office in the A. M. L.; second vice president, Hon. William H. Hotchkiss, A. A. A.; third vice president, A. P. Fleming, A. A. A.; secretary and manager, Isaac B. Potter, now president of the A. M. L.; treasurer, G. A. Farrington, A. A. A.

7—The racing board of the A. A. A. shall be in no way affected by the merger but shall represent the new organization, the racing rules of the A. A. A. shall continue in force as the rules of the united body.

8—In all cases where the A. M. L. and the A. A. A. have committees bearing the same or similar titles such committees shall unite and serve as one committee during the balance of the official year.

9—A concise statement setting forth the plan and purpose of this proposed union is to be sent by mail to each member of each organization and an opportunity given for all to express their approval or disapproval of the same. It is obviously necessary that on this vote the "polls should close" at some time previously fixed; and such time has been set at a date 15 days after the mailing of the printed slips. After the manner of other wedding ceremonies persons having objections to offer should do so promptly or forever after "hold their peace."

### WHAT THE UNION MEANS

It means that the users of motor cars in the United States are getting together and that the new association will command the united support of all who believe that organization is necessary. It means that a disintegration of forces among automobilists is no longer to be heard of in America, and that the only real means of attaining the things that automobilists are entitled to is now at hand. It means also that with this great union of interests good roads will be at hand.

### ALL SHOULD VOTE

The postal card ballots will be sent out next week. The league asks every member to express himself in some way upon this question. There should be a positive and decisive vote,—one that will show to our friends in the A. A. A. that league members are wide awake to every question that affects the general good of motoring.

### CANDIDATES AND ROADS

Sidney S. Gorham, chairman of the good roads committee of the Chicago Automobile Club, of Chicago, recently sent a letter to each of the candidates for governor of Illinois, asking for his views on the good roads question. The replies received to date are printed below, but Colonel Lowden and Mr. Deneen evidently think light of the subject, as they have made no reply so far.

L. Y. SHERMAN—Good roads in the country require proper material at a price within the voluntary exercise of the taxing power. The fear of excessive taxation prevents legislation. Nothing would benefit the state more than the improvement of its highways.

RICHARD YATES—I do not claim to be thoroughly informed in regard to the good roads movement, and do not understand that it has as yet taken definite form and purpose in Illinois. By authority of the last general assembly of the state I have appointed a good roads commission whose duty it is to investigate the various problems of road building in Illinois, such as the best and most economical native materials, the best system of road drainage, the best and most practicable methods by which the burden of costs may be equitably distributed among all the people, such as federal, state and county aid, convict labor, etc. The results of the investigation and studies of the commission shall be embodied in a report to the next general assembly to be accompanied by the form of a bill for an act to amend the present road laws of the state, so as to conform to the present advanced thought and requirements on the subject of road building.

The commission is now actively engaged in its work, but has not yet reached a point where its members feel justified in arriving at final conclusions, nor in making definite recommendations.

Personally, I would rejoice in seeing an improved condition of Illinois wagon roads, and sincerely hope that a plan may be devised by which this may be brought about without imposing an unjust burden upon the communities through which improved highways may be constructed. I understand that there is a strong sentiment in favor of the work being undertaken, and the expense being borne by county, state and federal aid. This appears to me to be just and reasonable, and I shall esteem it a pleasure to aid in bringing about a practicable and fair solution of the good roads problem.



"THE ARISTOCRAT OF AUTO CARS"

# FIAT

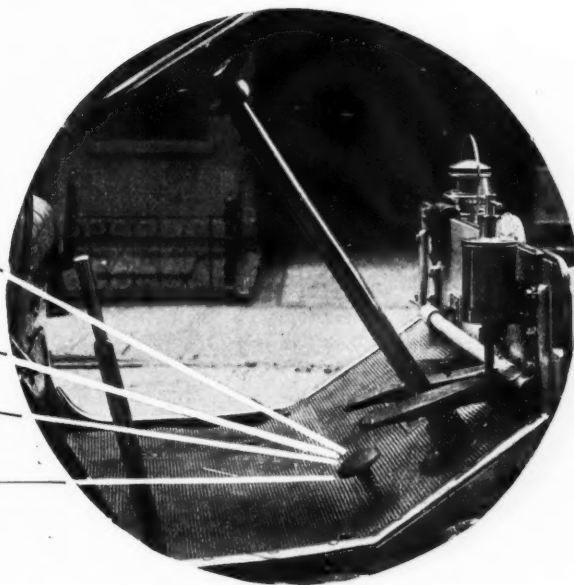
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Week's Test  
Proves It**

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**Went the entire test week  
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# Weston Patent Sustained

## And JEWELL and KEYSTONE Instruments Enjoined

The fundamental patent for the Weston Direct Current Electrical Measuring Instrument has just been sustained as valid by the United States Circuit Court for the Southern District of New York and as infringed by the direct current instruments, both voltmeters and ammeters, and of the portable and station type made by the Jewell Electrical Instrument Co., of Chicago, and by the Keystone Electrical Instrument Co., of Philadelphia.

On March 2nd, 1904, His Honor Judge Hoyt H. Wheeler held Patent No. 392387, dated November 6th, 1888, granted to Edward Weston for direct current electrical measuring instruments and owned by the Weston Electrical Instrument Company, good and valid, and infringed by the various types of the Jewell direct current instruments. The court said:

"That this new arrangement of the coil upon pivots in this form of magnetic field, x x x was a great improvement on all or any prior electrical measuring instruments is very plain and obvious from an observation of the things which had gone before. It involved invention of high order and resulted in great success. Neither the anticipations relied upon, nor the alleged want of patentable novelty, seems to defeat or affect the validity of the patent for this improvement x x

Decree for the plaintiff. Hoyt H. Wheeler, J."

On April 2nd, 1904, the same court, by His Honor Henry E. Lacombe, Circuit Judge, granted a motion for preliminary injunction in Weston Electrical Instrument Co. vs. J. Franklin Stevens and another, doing business as the Keystone Electrical Instrument Co. The instruments involved were all of the various types of Keystone direct current electrical measuring instruments. The court said:

"Without now making any decision as to the other claims it is held that 8, 12 and 13 are valid and infringed by defendant's structure, which certainly is as close if not closer, to device of the patent than was the infringing structure in the Jewell case."

The Weston Electrical Instrument Co., has granted no licenses to any other manufacturers to make or sell its movable coil direct current electrical measuring instrument, and all such instruments are unauthorized and are an infringement of the Weston Patent No. 392387.

All who deal in such infringing instruments and all who hereafter put into use any such infringing instruments, and also all who continue hereafter to use infringing instruments previously installed, are guilty of infringement and will be held to strict accountability by the Weston Electrical Instrument Co.

The Weston Electrical Instrument Co. is prepared promptly to supply the entire demand for direct current electrical measuring instruments of all types and for all uses.

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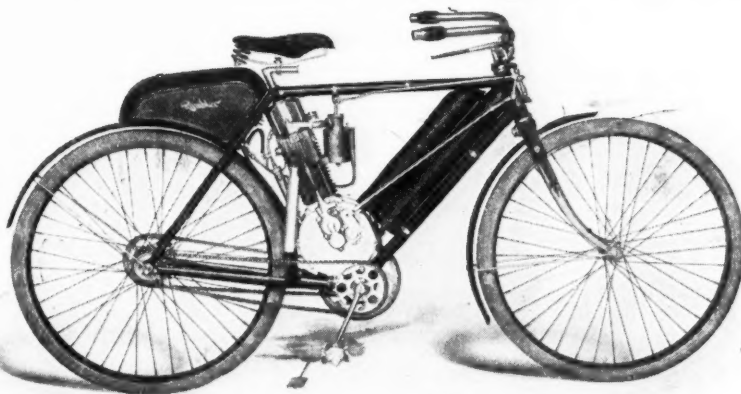
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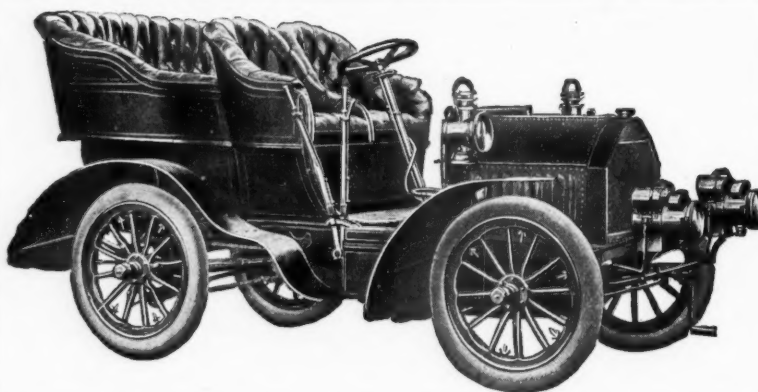
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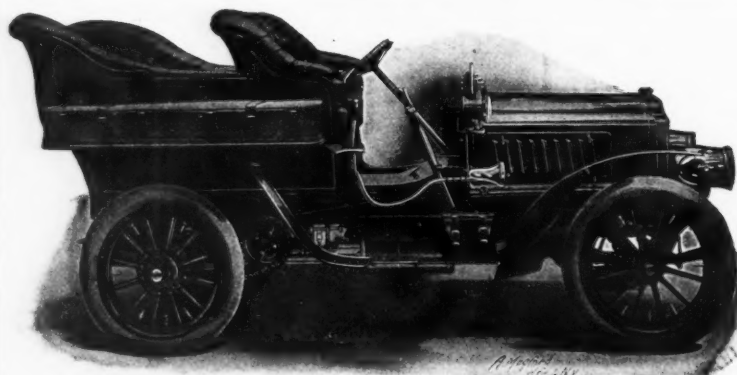
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That we are going to remodel our motor and increase the cylinder capacity in order to get greater power, he don't know what he is talking about. We're going to do nothing of the kind. We don't need to. We had more power in that little 5 x 5 engine of last year than was needed for ordinary work. It was tried at extraordinary work and was not found lacking. Think what it means to hook onto a load of street railway iron—seven 70-foot rails loaded on two trucks, requiring four heavy horses to pull; the estimated weight of steel and trucks being over eight tons, and draw that load up a four per cent grade from a standing start! A Canton, Ohio, Cadillac owner (Mr. A. H. Wilson) did it, not only once, but several times. A two-cylinder (opposed) engine, rated at 8 h. p., tried it and failed to move it forward an inch. Remodel the Cadillac engine? Certainly not! there's no reason for it. When anyone tells you this

## Don't You Believe Him.

The Cadillac engine of last year had ample power, (it's got more this year) for those who KNEW how to operate it. A larger cylinder would be no advantage to those who DO NOT know how to secure all the available power a gas engine is capable of. The Cadillac motor is and always has been a wonder. Competitors recognized it from the first minute after it came out. Some of them have been busy "knocking" ever since, others "got wise" and made imitations, others "sawed wood," but all are guessing. When Leland & Faulconer Mfg. Co. makes anything it is as near right as fine tools, gauges, dies, machinery and men assembled in a well organized and old established firm can make it. And when they tell you it has a certain h. p. you can bank on its having more. This well known firm makes all Cadillac motors and transmissions, and they are made well. Speaking of transmissions reminds us—but never mind, we'll tell you about those next week. We are "all in" for want of space.

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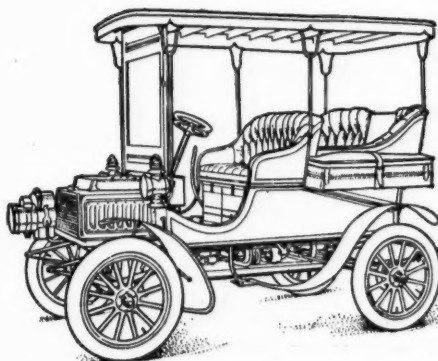
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Double opposed cylinders, 16 horse  
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Double cylinder tonneau, complete  
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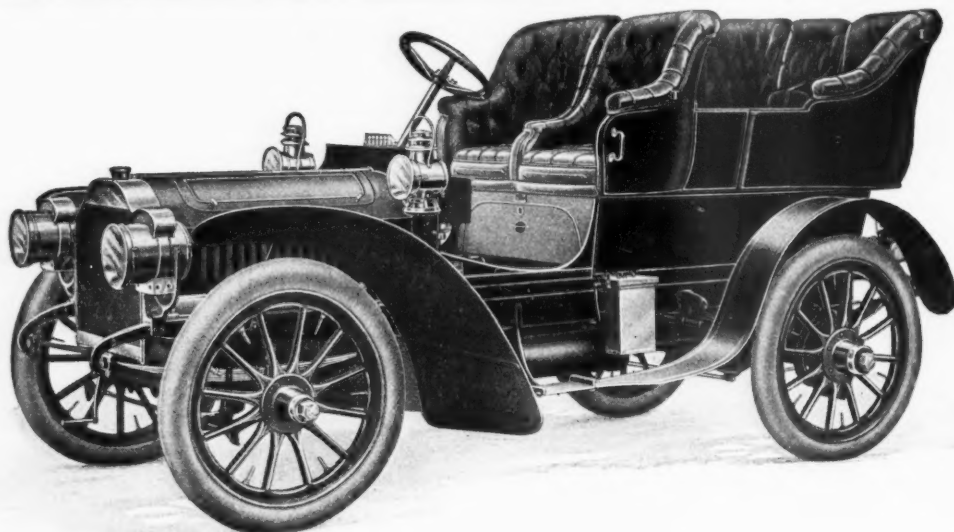
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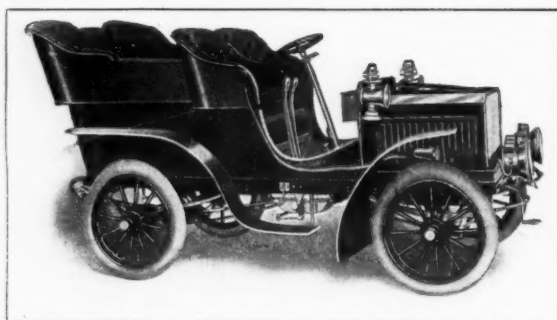
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Both the basic Selden patent and upward of 400 other patents owned by members of this Association will be enforced against infringers. Manufacturers, Importers, Dealers and Agents, also Users of unlicensed machines, are liable.

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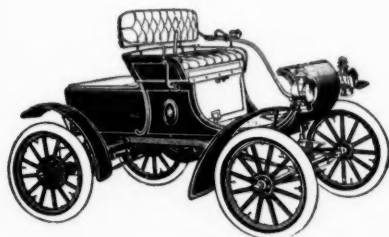
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Price \$850.00

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This machine solves the problem of distance in the delivery of goods. The ease with which it is operated and its freedom from any tendency to get out of repair has made it extremely popular with all classes of merchants.

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THE LIGHTEST  
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ABSOLUTELY SAFE  
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MOST ECONOMICAL  
TO KEEP

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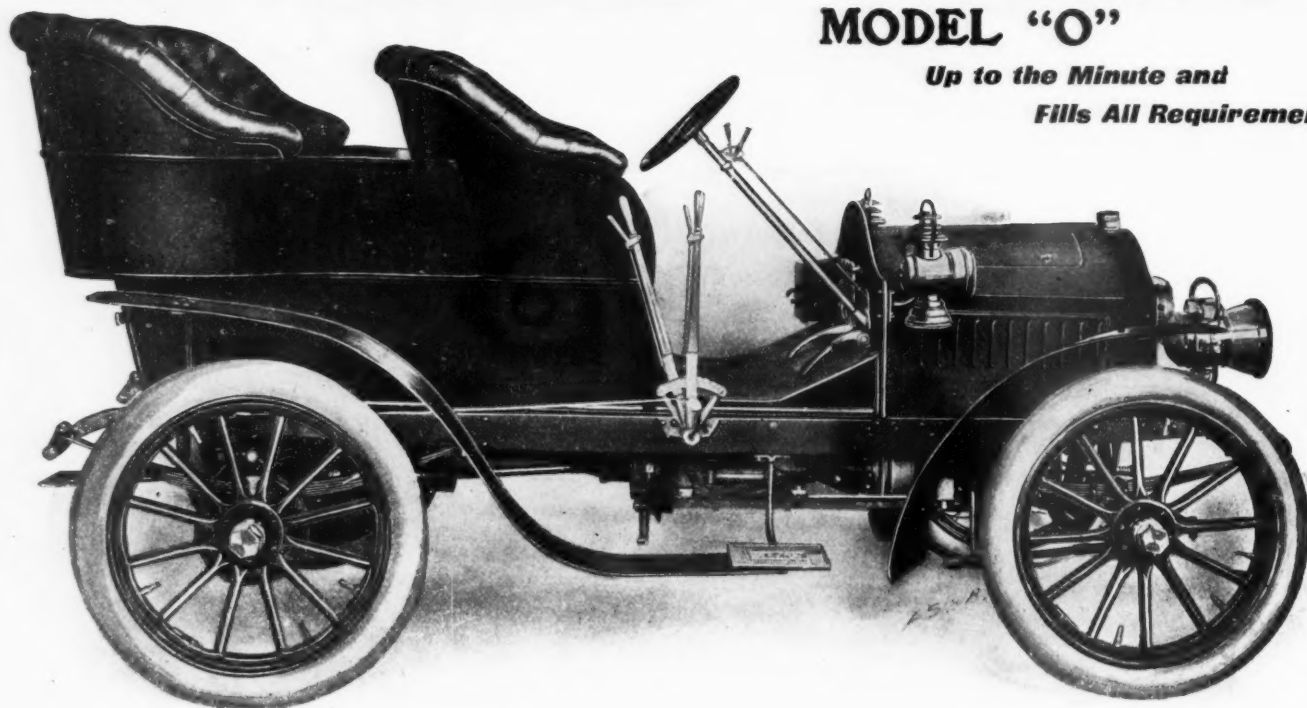
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The G. & J. Tire has quality in its construction and years of experience in detachable tire construction back of it.

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Between riding in a car fitted with

# Continental Tires

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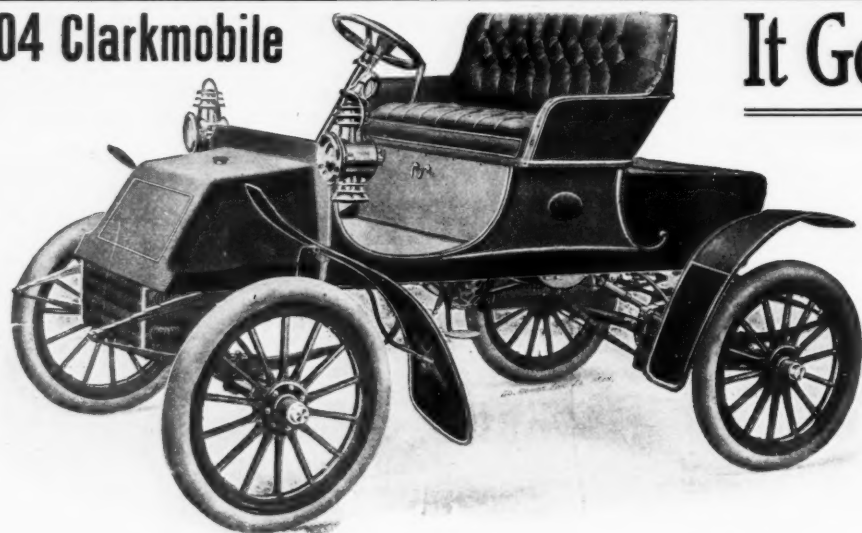
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EMIL GROSSMAN, Manager.

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Am. Office, 298 Broadway, New York.

## 1904 Clarkmobile



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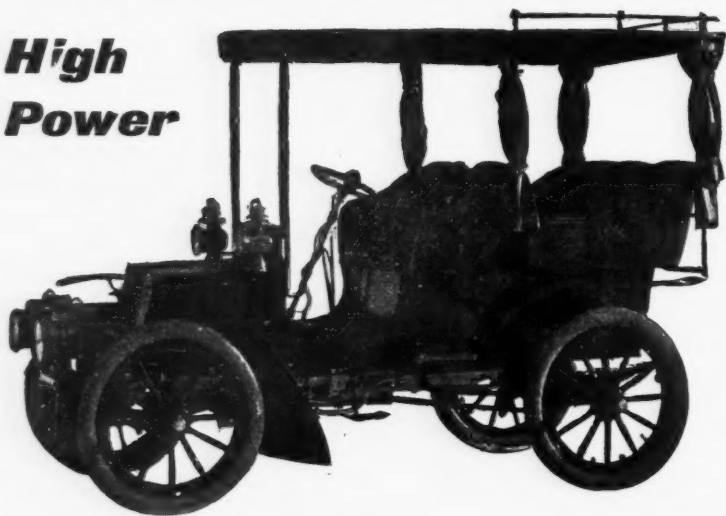
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For the Average Man to Run**

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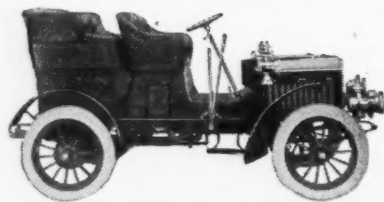
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excellent beyond  
comparison; un-  
approachable in  
kind, character  
or degree.



100 MILES ON ONE FILLING OF TANKS-WEIGHT 1600 LBS.

The advantages in the one feature of ease and flexibility of control alone differentiate the White from other machines. While the operators of gasoline machines are wearing out themselves and their cars, throwing in and out their clutches and changing from gear to gear to meet the varying conditions encountered, the operators of the Whites, by simply manipulating the throttle, adapt without physical effort or without strain on the machine, the speed of the car and the power applied to the driving wheels as the occasion demands.

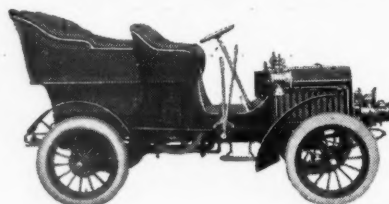
**WHITE SEWING MACHINE COMPANY CLEVELAND, O.**



family car at a moderate figure. ¶ We expect you to see and inspect the Yale, but if you'll send for our book it will help you to appreciate this splendid car.

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AND  
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POWER  
STRENGTH  
SIMPLICITY

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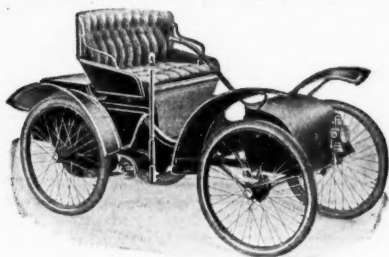
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A Practical Vehicle at a Popular Price



— ONLY —  
**\$475.00**

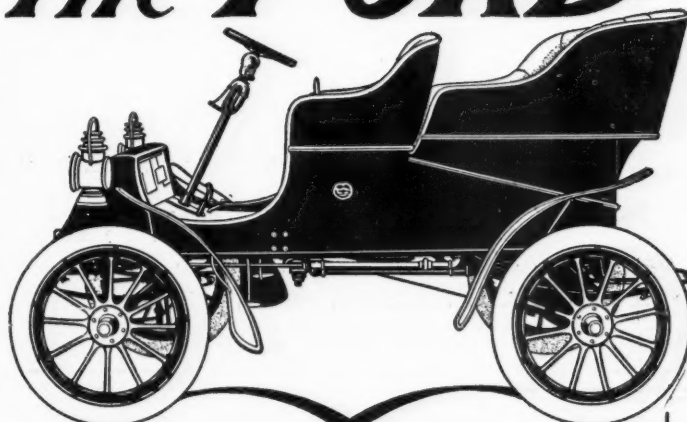
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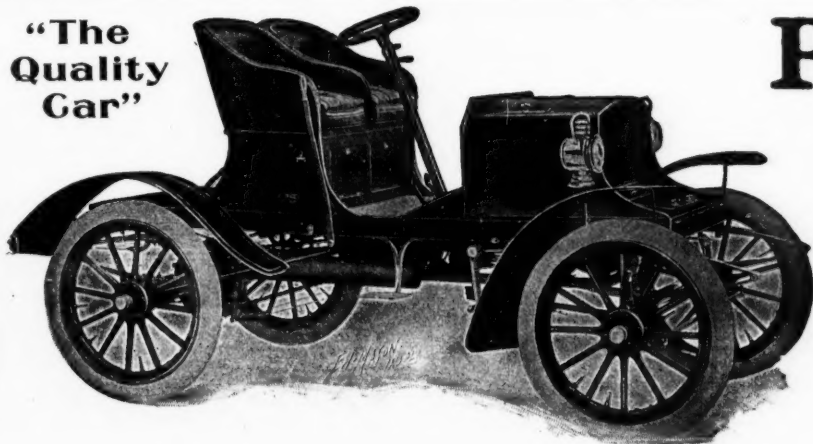
If a single cylinder engine is as good as the Ford double opposed motor, why do all the \$2,000 to \$5,000 cars have two or more cylinders? The truth is, that manufacturers of single cylinder machines only continue to make them because it would cost too much to change their present out of date models.

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**Price with Tonneau, \$900**  
**As a Runabout, - \$800**

Write for illustrated catalogue and name of our nearest agent.  
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"The  
Quality  
Car"



# PREMIER

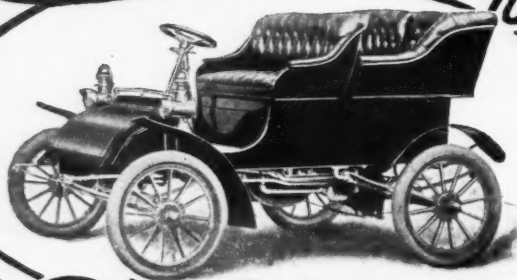
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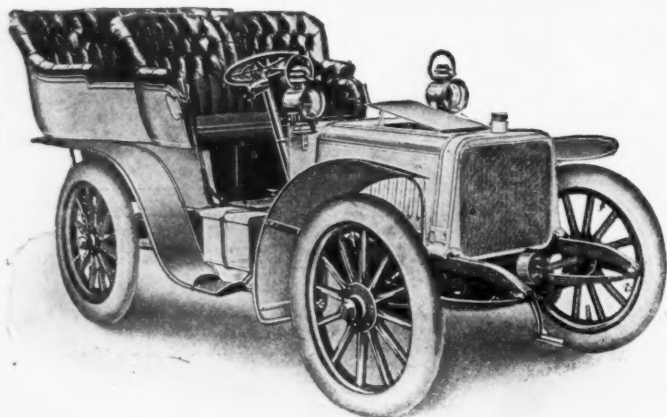
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Triumph over them all—First in Records, First in Sales, First in Reliability. 12, 15-20, 24-28, and 30-35 horsepower. Any style body desired. The Double Phaeton, with side entrance, and Tulip with swinging front seat, are the leaders



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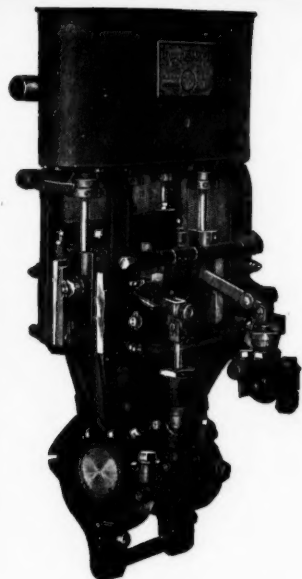
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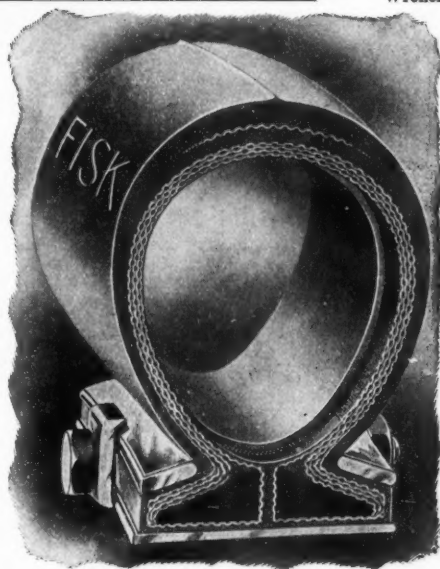
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SIMPLICITY IS THE  
IMPORTANT FEATURE.

Mechanically  
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has system of storage in the base; requires no other batteries for starting. If you desire a **FIRST CLASS** machine at a low price be sure and get the

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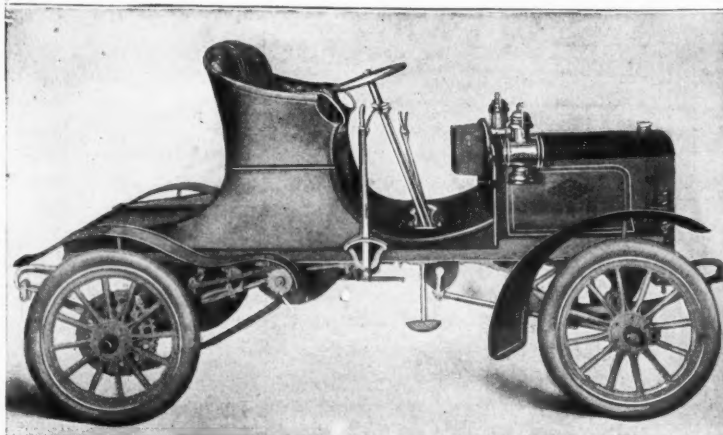
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Workmanship and material high grade, with high power, 100 pounds per horse power.

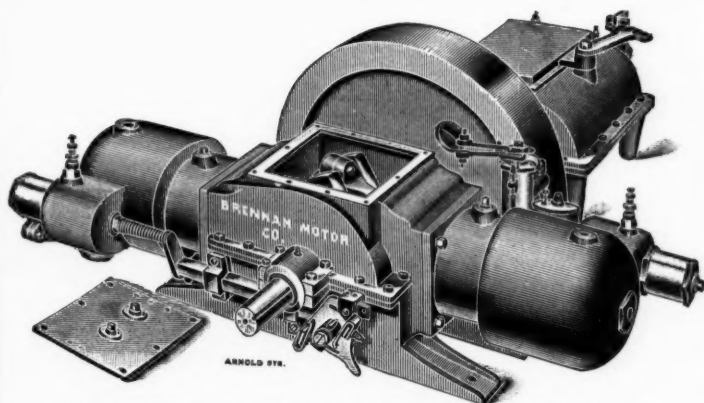
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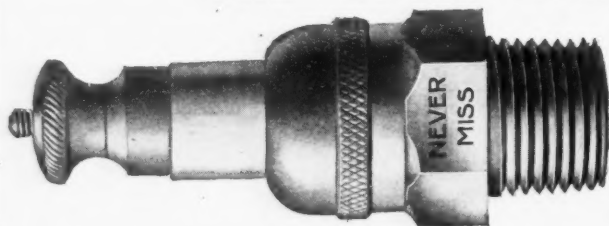
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write us. We can furnish you with a practical powerful motor ready to set up in your car with full working drawings of any standard makes of cars.

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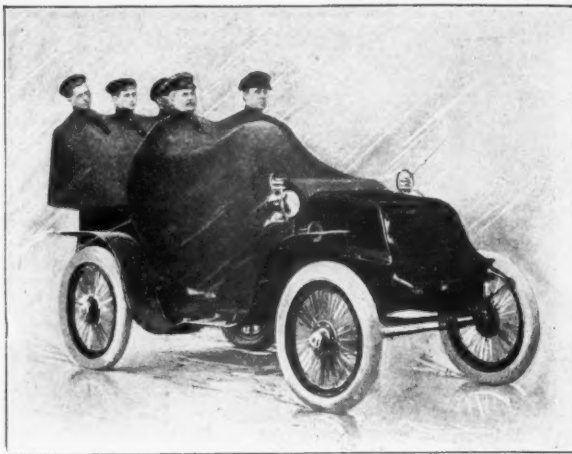
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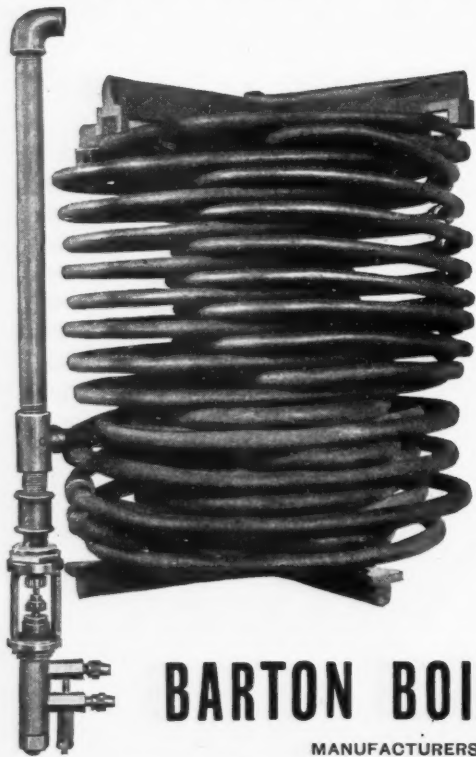


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The operator mounts the  
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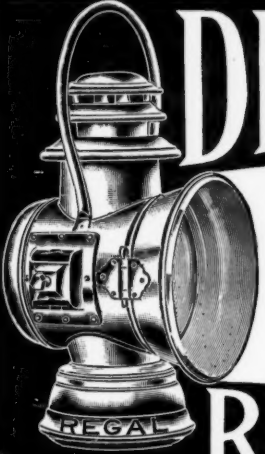
Write us what car you use, and we will  
tell you all about it.

THE STEEL BALL COMPANY  
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THE NEW WAY





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## YOU WILL SEE DIETZ LAMPS

OR AN IMITATION OF THEM ON EVERY STEAM OR GASOLINE AUTOMOBILE.

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## Automobile Lamps

They will suit you.



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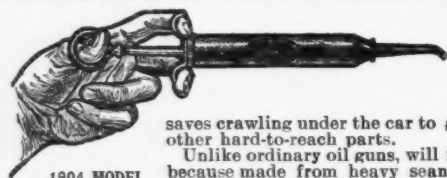
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CANT GUN can be  
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with one hand. This

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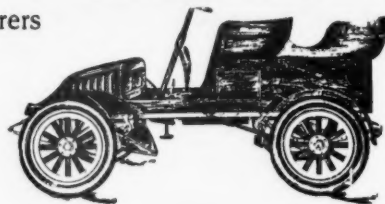
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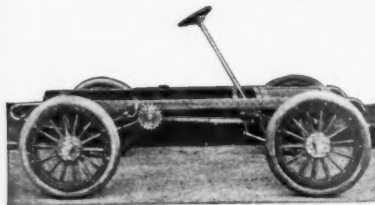
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We supply parts and  
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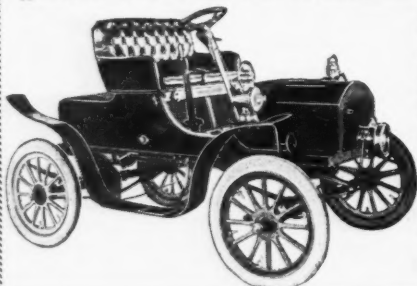
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Built for American Roads

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Electrical apparatus for Auto-  
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Dirt, dust and oil proof.

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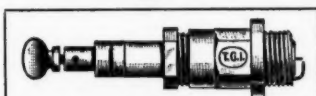
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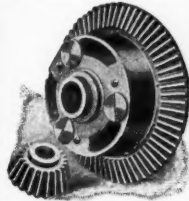
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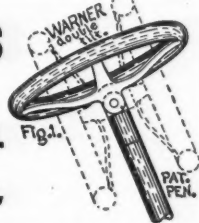
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"STAYS RIGHT THE LONGEST"



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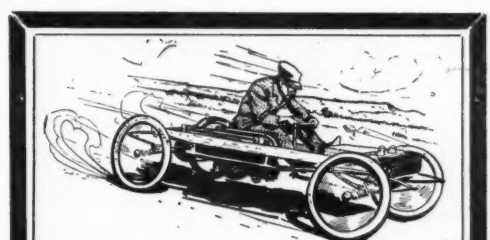
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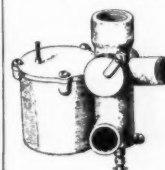


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For Automobile, Launch and Stationary Engines  
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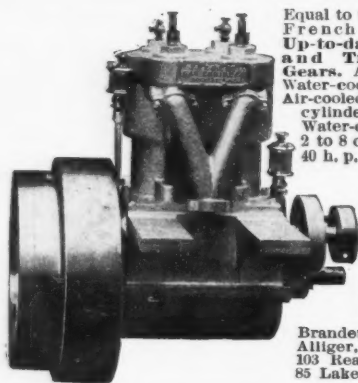
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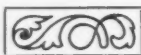
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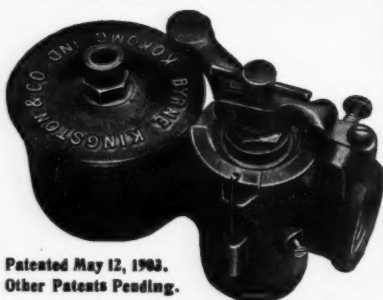
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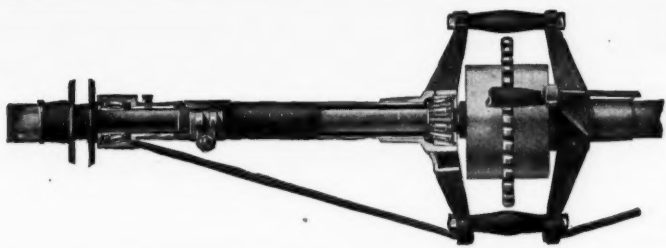
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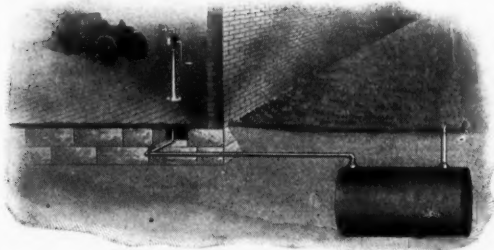


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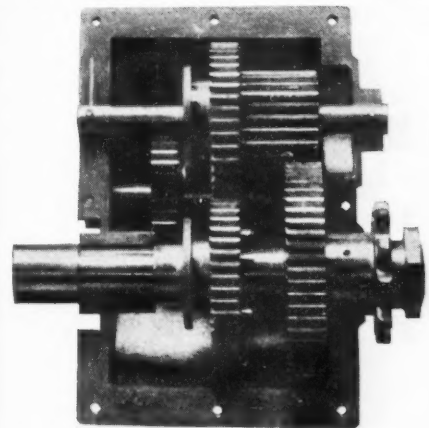


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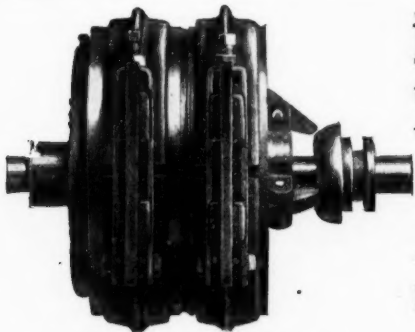


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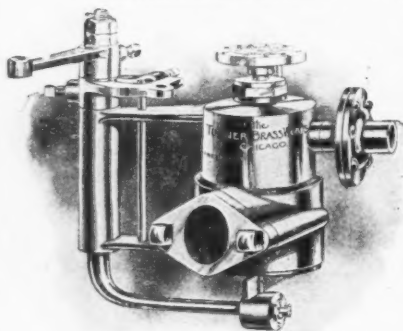
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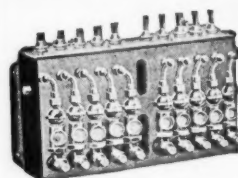
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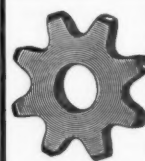
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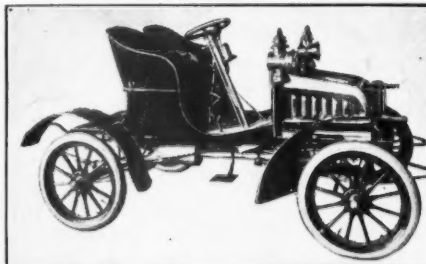
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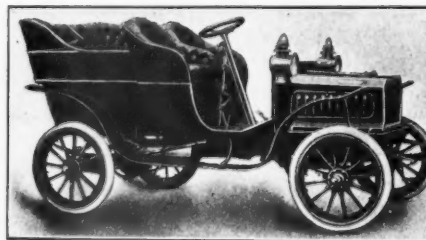
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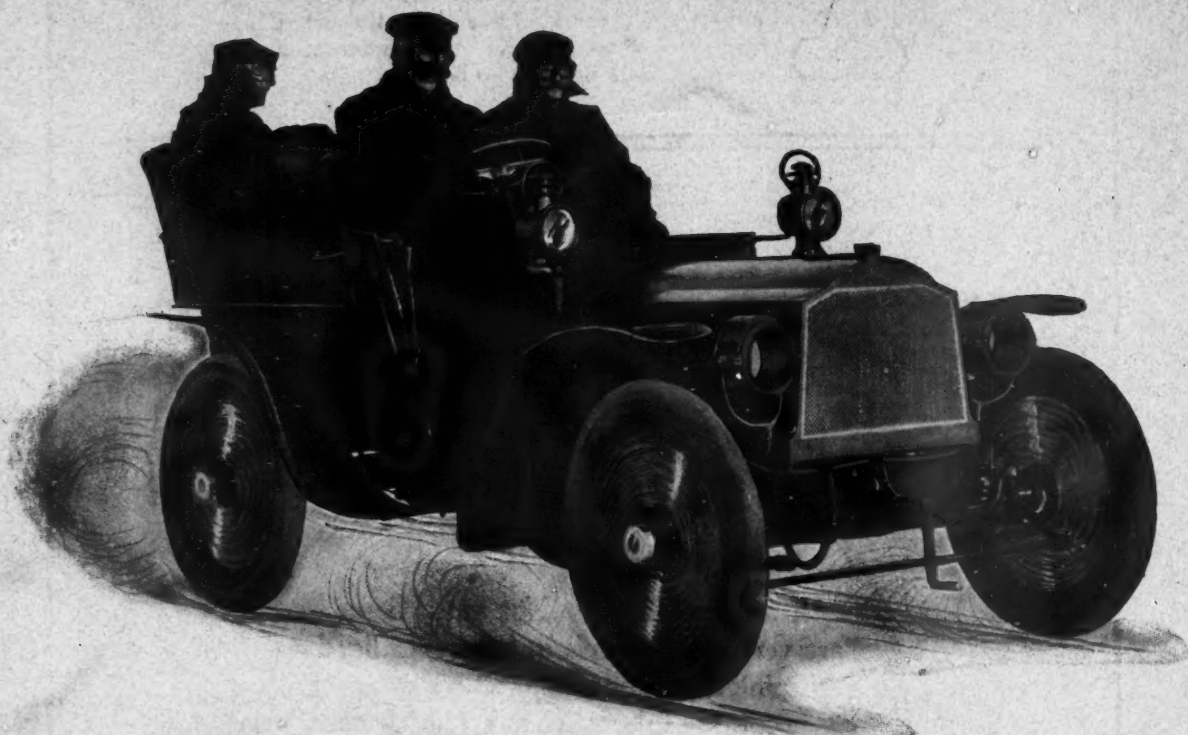


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